"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

CATEGORY :
CONTRIB. :

ABS. JOUR.: Ref Zhur-Biologiya, No. 5, 1959, No. 20083

Author :
INST. :
TITLE :

ORIG. PUB.:

ABSTRACT : expenses are fully covered even by relatively small additional crop yields. -- N.N. Sokolov

CARD : 3/3

28

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

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TOLSTOY, K.P.

Use of ammonia water on farms in Irkutsk Province. Zemledelie 6 no.4:34-39 Ap '58. (MIRA 11:4)

1.Irkutskaya Gosudarstvennaya sel'skokhozyaystvennaya opytnaya stantsiya.

(Irkutsk Province--Ammonia)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

Tolstoy, K.P.

FILATOV, N.K., kandidat sel'skokhozyaystvennykh nauk; TOLSTOY, K.P.

Harvesting grain in separate stages in Irkutsk Province. Zemledelie 5 no.7:53-56 Jl '57. (MLRA 10:8)
(Irkutsk Province--Grain--Harvesting)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.

"Dictionary on petroleum geology." Reviewed by M.Tolstoi. Geol. nefti i gaza 3 no.7:59-60 Je[i.e. Jl] '59. (MIRA 12:9)
(Geology--Dictionaries)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

SOV/9-59-7-12/15

14(5)

AUTHOR: Tolstoy, M.

TITLE: On the Book "Dictionary on Petroleum Geology" (Gostoptekhizdat, 1958)

PERIODICAL: Geologiya nefti i gaza, 1959, Nr 7, pp 59 - 60 (USSR)

ABSTRACT: This is a critical review of the aforementioned book composed by a group of authors under the supervision of M.F. Mirchink, Corresponding Member of AS USSR. The main authors are: A.N. Fedorov /Deceased/, A.V. Ul'yanov /Deceased/, V.E. Khayn, G.I. Teodorovich, V.A. Uspenskiy, O.A. Radchenko, V.V. Fedynskiy, M.I. Maksimov, N.N. Subbotina, D.L. Stepanov, V.A. Sokolov and others.

Card 1/1

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GORFMAN, A.I., kand.tekhn.nauk; DEMBO, A.R., kand.tekhn.nauk; VOLOTSKOY, N.V., kand.tekhn.nauk, nauchnyy red.; TIMOFEYEV, V.A., doktor tekhn.nauk, retsenzent; TOLSTOY, M.G., kand.tekhn.nauk, retsenzent; ROTENBERG, A.S., red.izd-va; VORONETSKAYA, L.V., tekhn.red.

[Automatic control in the construction industry] Avtomatika v stroitel'stve. Leningrad, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 183 p. (MIRA 12:8)
(Automatic control) (Construction industry)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

BELYAYEV, Aleksandr Vasil'yevich; TOLSTOY, Mikhail Georgiyevich; MASLENNIKOV, G.P., nauchnyy red.; STRATILATOVA, K.I., red.; NESMYSLOVA, L.M., tekhn. red.

[New prefabricated elements in construction]Novye sbornye konstruktsii v stroitel'stve. Moskva, Proftekhizdat, 1962. 88 p. (MIRA 15:10)

(Building materials)
(Building--Technological innovations)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

BELYAYEV, Aleksandr Vasil'yevich; TOLSTOY, Mikhail Georgiyevich; GANDZHUNTSEV, I.M., nauchn. red.; STRATILATOVA, K.I., red.; DORODNOVA, L.A., tekhn.red.

[Assembling prefabricated elements] Montazh sbornykh konstruktsii. Izd.2., perer. i dop. Moskva, Proftekhizdat, 1963. 315 p. (MIRA 17:3)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

BELYAYEV, Aleksandr Vasil'yevich, doktor tekhn.nauk; TOLSTOY, Mikhail Georgiyevich, dotsent; BILINSKIY, M.Ya., red.; SUSHKEVICH, V.I., tekhn.red.

[Assembling precast reinforced concrete elements] Montazh sbornykh zhelezobetonnykh konstruktsii. Moskva, Vses.uchebno-pedagog.izd-vo Trudrezervizdat, 1959. 298 p. (MIRA 13:5)
(Precast concrete construction)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, Mikhail Georgiyevich; RUZIN, B.V., nauchn. red.; STAROSVETOVA, V.G., red.

[Masonry and furnace work in rural construction] Kamennye i pechnye raboty v sel'skom stroitel'stve. Moskva, Vysshaia shkola, 1965. 302 p. (MIRA 18:12)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.I.

Radioactive logging methods used in the cis-Carpathian region.
Nauk.zap.Kyiv.un. 16 no.14:225-231 '57. (MIRA 13:4)
(Carpathian Mountains region--Oil well logging, Radiation)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.I.

Relationship between the radioactivity of clays and their mineralogical composition. Izv.vys.ucheb.zav.;geol.i razv. 4 no.10:66-71 O '61. (MIRA 14:12)

1. Kiyevskiy gosudarstvennyy universitet imeni T.G. Shevchenko.
(Clay)
(Radioactive substances)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.I.; CSTAFIYCHUK, I.M.; SHARAY, N.Ya.; ZGUROVSKIY, V.M.

Utilization of mass determination data of the magnetic susceptibility of bedrocks for the purposes of petrological and geochemical studies. Sbor.nauch.rab.Kiev.un. no.1:79-96 '63. (MIRA 18:11)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.I.; OSTAFIYCHUK, I.M.; GUDIMENKO, L.M.

Types of curves of the statistical distribution of chemical elements in rocks and methods for calculating their parameters. Geokhimiia no.11:1325-1334 N '65.
(MIRA 19:1)

1. Kiyevskiy universitet im. T.G. Shevchenko. Submitted December 30, 1965.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M. I.; OSTAFIYCHUK, I. M.

Variation-statistical processing of the results of studying the composition of rocks. Razved. i okh. nedr 28 no.5:23-29 My '62. (MIRA 15:10)

1. Kiyevskiy gosudarstvennyy universitet.

(Rocks—Analysis)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.I.

Using the results of radiometric surveying for metallogenetic prediction. Geol.zhur. 22 no.5:69-75 '62. (MIRA 15:12)

1. Kiyevskiy gosudarstvennyy universitet.
(Radioactive prospecting) (Ore deposits)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

S/051/62/013/002/014/014
E202/E492

AUTHORS: Feofilov, P.P., Tolstoy, M.N.

TITLE: Luminescence kinetics of divalent samarium in single crystals of strontium and barium fluorides

PERIODICAL: Optika i spektroskopiya, v.13, no.2, 1962, 294-296

TEXT: The object of this work was to confirm the results of earlier work (Opt. i spektroskopiya, v.12, 1962, 493) and in particular to give detailed quantitative data on the luminescence kinetics of the Sm^{2+} ions in the single crystals of SrF_2 and BaF_2 and the explanation of the interaction of 5d and 4f configurations. An impulse taumeter designed by Tolstoy was used to find the relations between the duration of luminescence and the radiated wavelength. Luminescence was excited with the help of an impulse light modulator giving 10 impulses per sec. It was found that the thermal equilibrium between the states of the $4f^5\,5d$ configuration and the ^5D_o level of the $4f^6$ configuration was established within a time considerably shorter than the average duration of the excited state and hence the aggregate of the excited levels could be considered as a single system. From

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Luminescence kinetics ...

their premises the authors developed an approximate equation describing the kinetics of the deactivation of the excited state the solution of which gave the exponential kinetic of luminescence. It was concluded that the above type of luminescence occurs during the transitions from two excited energy systems which are in mutual thermal equilibrium. Irrespective of the existing differences in the population of these systems, the intensities of their radiation within the determined temperature interval were comparable as a result of sharp differences in the probabilities of the radiative transitions. The sharp fall in the intensity of luminescence from the $^5D_0$ levels with temperature was explained by the shift of the electrons from the $^5D_0$ levels to the levels of the $4f^5\,5d$ configuration.
There are 2 figures.

SUBMITTED: March 6, 1962

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

~~KRESS, YA. YE.~~ TOLSTOY, M.N.

AID Nr. 995-19 21 June

LUMINESCENCE AND STIMULATED EMISSION OF NEODYMIUM-ACTIVATED GLASS (USSR)

Feofilov, P. P., A. M. Bonch-Bruyevich, V. V. Varvin, Ya. A. Imas, G. O. Karapetyan, Ya. Ye. Kriss, and M. N. Tolstoy. IN: Akademiya nauk SSSR, Izvestiya. Seriya fizicheskaya, v. 27, no. 4, Apr 1963, 466-472. S/048/63/027/004/002/026

Studies of luminescence and induced emission of neodymium-doped glass have been carried out, and optimum glass composition was determined. Glasses were developed which are superior to those used by E. Snitzer. Absorption and luminescence spectra were obtained, and the dependence of the duration of luminescence on concentration was determined. Induced emission was observed both in glass fibers encased in glass and in [illegible] homogeneous glass cylinders. The dependence of time characteristics [illegible] spectral composition of induced emission on pumping energy was [illegible]. The prospects of application of the material to practical lasers [illegible] of induced emission phenomena are discussed.

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.N.; FEOFILOV, P.P.

On the "puzzling" luminescence of thulium in fluorite. Opt. i spektr. 16 no.2:372-374 F '64. (MIRA 17:4)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

KARLOS, Ya. G.; TOMTOV, M.N.; FEDOROV, P.P.

Stimulated emission of neodymium in lead molybdate single crystals. Opt. i spektr. 18 no.1:177-179 Ja '65. (MIRA 18:4)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

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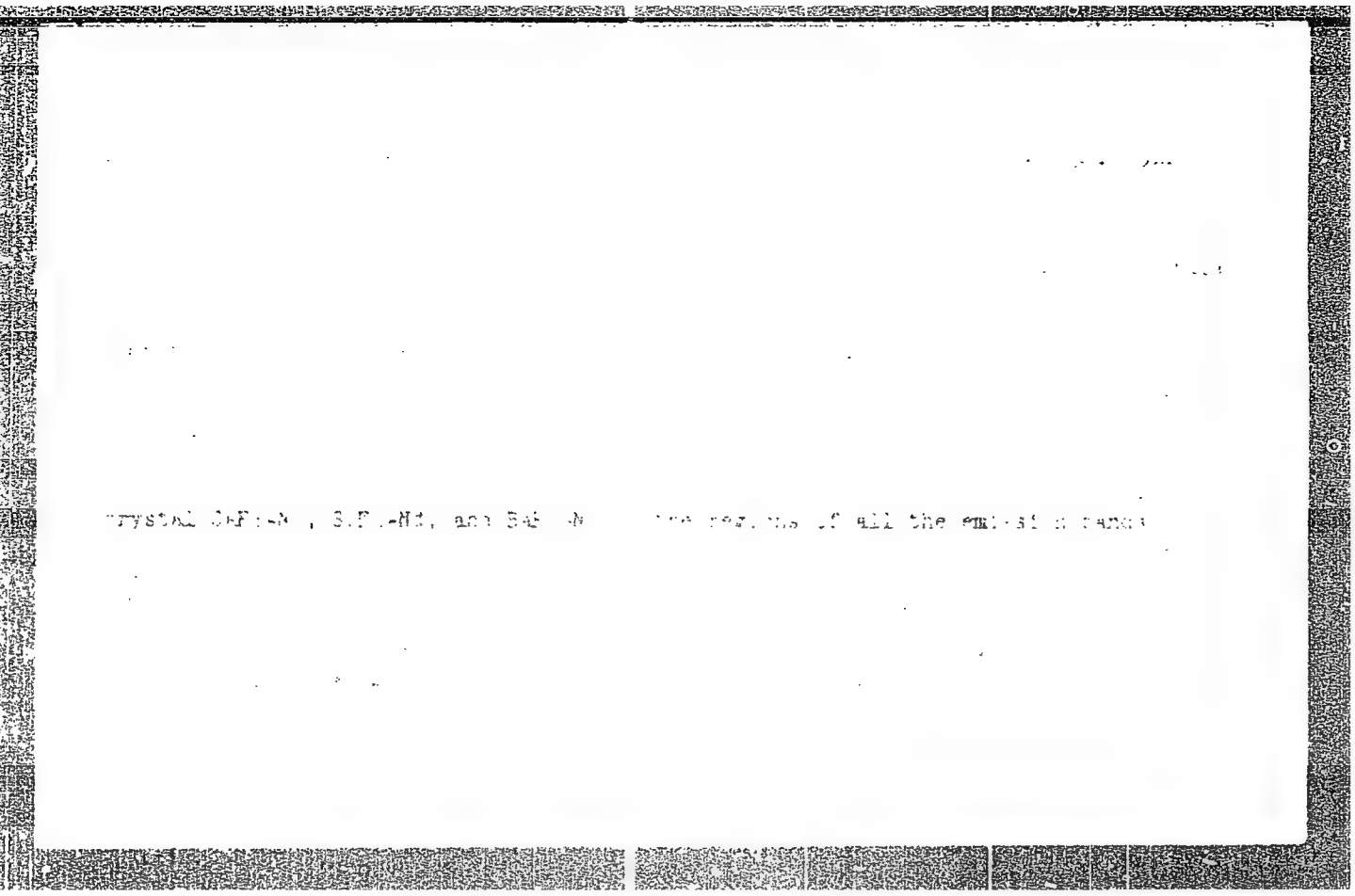

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

L 17879-66 EWT(1)/EWT(m)/EWP(e)/EWP(t) IJP(c) JD/JW/WH

ACC NR: AP5027676 SOURCE CODE: UR/0051/65/019/005/0812/0814

AUTHOR: Tolstoy, M. N.; Feofilov, P. P.

ORG: none

TITLE: Removal of the degeneration of energy levels of cubic activation centers in mixed crystals of the fluorite type

SOURCE: Optika i spektroskopiya, v. 19, no. 5, 1965, 812-814

TOPIC TAGS: mixed crystals, fluorite, IR spectrum, luminescence spectrum, rare earth metal, single crystal, spectral line, line width, line splitting

ABSTRACT: According to the literature (D. S. McClure, Z. Kiss, J. Chem. Phys., 39, 3251, 1963; P. P. Feofilov, Electron. Quant., C. R. 3e Conf. internat., Paris. - N. Y. 1964, p. 1079; Acta phys. polon., 26, 331 1964), the degeneration of the energy level, which usually decreases in the fields of a lower symmetry, is partially retained in crystals of the fluorite type because of a high symmetry of the intercrystalline field (O_h) surrounding the bivalent ions of an activator (rare earthelements) isomorphically intruding into the fluoride-type crystals.

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L 17879-66

ACC NR: AP5027676

21,44,55

A study was made of the infrared luminescence spectra of single crystals in the system $Ca_xSr_{1-x}F_2$ (x=0, 0.1, 0.25, 0.5, 0.75, 0.9, and 1.0) activated by 0.1 mole% Dy^{++}, Tu^{++}, and Ho^{++}. Measurements were made at 77K. The simplest changes of the spectrum (with changed composition) were observed in crystals activated by Dy^{++}, where the widened lines were monotonically displaced from one extreme position to another. At x=0.5 the lines widened to a degree that that the adjacent lines could not be resolved. The absence of sharp changes was attributed to the absence of degeneration related to the presence of an inversion center. The spectra of the crystals activated by Tu^{++} and Ho^{++} were more complex. Two intensive lines, having λ=1.116 and 1.189 μ (CaF_2) which corresponded to the Stark components of the therms $^2F_{5/2}$ were observed in single-component crystals activated by Tu^{++}. In mixed crystals the first line monotonically displaced (with changes in χ), whereas the second line was split in two with the maximum degree of splitting ($\sim$50cm^{-1}) at χ=0.5. The splitting of lines reflected the twofold degeneration of the energy level which can be removed at the expense of a relatively small distortion of symmetry caused by replacements in the cation coordination sphere. The duration of the luminescence of Tu^{++} was the same ($\sim$7 m sec) in the single and mixed crystals. This indicated the magnetic-dipole character of the luminescence of Tu^{++}. The emission spectrum of Ho^{++} in single

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L 17879-66

ACC NR: AP5027676

MeF_2 crystals consisted mainly of the two intense lines in the region 1.82-1.83 μ. In mixed crystals both lines were split by $\sim 12 cm^{-1}$. The short-wave components of splitting disappeared at the He temperatures. This suggested that the emitting level in the MeF_2-Ho^{++} was the same component of the therm $^4I_{13/2}$ subjected to fourfold degeneration (G). The components of the main therm $^4I_{15/2}$ were twofold degenerated ($E_{1/2}$ and $E_{3/2}$). The authors thank A. N. Terenena for her interest in the work. Orig. art. has: 2 fig.

SUB CODE: 20/ SUBM DATE: 20Mar65/ ORIG REF: 003/ OTH REF: 002

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

L 15768-66 EWI(e)/EWT(m)/EWP(t)/EWP(k)/EWP(z)/EWP(b) IJP(c) JD/JG/WH

ACC NR: AP5027677 SOURCE CODE: UR/0051/65/019/005/0817/0819

AUTHOR: Feofilov, P. P.; Timofeyeva, V. A.; Tolstoy, M. N.; Belyayev, L. M.

ORG: none

TITLE: Luminescence of neodymium and chromium in an yttrium-aluminum garnet

SOURCE: Optika i spektroskopyn, v. 19, no. 5, 1965, 817-819

TOPIC TAGS: spectroscopy, crystal lattice structure, luminescence, neodymium, chromium, yttrium, crystal growing, single crystal

ABSTRACT: Crystals of Y-Al garnet (YAG) were grown in a fluoride and lead oxide melt. Neodymium and chromium were added to the melt in the form of oxides to activate the crystals, and the infrared luminescence spectrums of the YAG-Nd single crystals were determined in the regions of all four groups of radiations, situated near 0.9, 1.1, 1.4, and 1.8μ and corresponding to the transition from the excited $^4F_{3/2}$ term to the terms $^4I_{9/2-15/2}$. The spectrums were taken at 77K by the diffraction spectrometer with receiver from PC3 and the radiations of the first group were, in addition, photographed on I-920 film in a spectrograph with a

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UDC: 535.37 : 548.0

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dispersion of ~13 A/mm. The value of splitting of the $^4F_{3/2}$ (ΔE=84cm^{-1}) was much larger than that of the lanthanum halides and scheelite crystals. This indicated the larger force of the intercrystalline field, which was substantiated by the splitting values of the ^4I terms. But the relative splitting of individual ^4I terms was the same as in the scheelite and other bases: the largest splitting was observed in the $^4I_{15/2}$ and $^4I_{9/2}$ terms (976 and 857 cm^{-1}). It was noticeably smaller in the $^4I_{13/2}$ and $^4I_{11/2}$ terms (574 and 518 cm^{-1}). The study of Nd luminescence was facilitated by the presence of Cr^{3+} in the crystals, which sensitized the luminescence of Nd^{3+}. The absorption spectrums of Cr^{3+} in YAG were described by D. L. Wood et al. (J. Chem. Phys., 39, 890, 1963). The effect of the sensitization of Nd luminescence by Cr^{3-} was proven both by spectral and by kinetic studies. The results agreed entirely with those of Z. J. Kiss and R. C. Dunkan (Appl. Phys. Lett., 5, 200, 1964) on the nonradiative resonance transfer of YAG of excitation energy from chromium to neodymium ions. Orig. art. has: 2 figures.

SUB CODE: 20/ SUBM DATE: 15Apr65/ ORIG REF: 003/ OTH REF: 005

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

L 42100-66 EWT(m)/EWP(e) WH

ACC NR: AP6025970 SOURCE CODE: UR/0051/66/021/001/0126/0128

AUTHOR: Petrovskiy, G. T.; Tolstoy, M. N.; Feofilov, P. P.; Tsurikova, G. A.; Shapovalov, V. N.

598

ORG: none

TITLE: Luminescence and stimulated emission of neodymium in fluoberyllate glasses

SOURCE: Optika i spektroskopiya, v. 21, no. 1, 1966, 126-128

TOPIC TAGS: stimulated emission, luminescence spectrum, neodymium, fluoberyllate glass, BERYLLIUM COMPOUND, GLASS

ABSTRACT: The luminescence and stimulated emission of the Nd^{3+} ion were studied in fluoberyllate glasses of the following compositions:

1) BeF_2 — 60; AlF_3 — 10; CaF_2 — 10; KF — 15; MF — 5% (M = Li, Na, K, Rb, Cs, Tl).
2) BeF_2 — 70; AlF_3 — 10; MF — 20% (M = Li, Na, K, Rb, Cs).
3) BeF_2 — 60; AlF_3 — 10; KF — 20; CaF_2 — 5; MF_2 — 5% (M = Mg, Ca, Sr, Ba, Zn, Cd, Pb).

Since the absorption and luminescence characteristics of all the glasses were found to be very similar (only glasses containing Li had substantially wider emission bands), the data obtained in the study are considered typical for fluoberyllate glasses of the most diverse compositions. The luminescence spectrum of Nd^{3+} is shown in Fig. 1. Its

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ACC NR: AP6025970

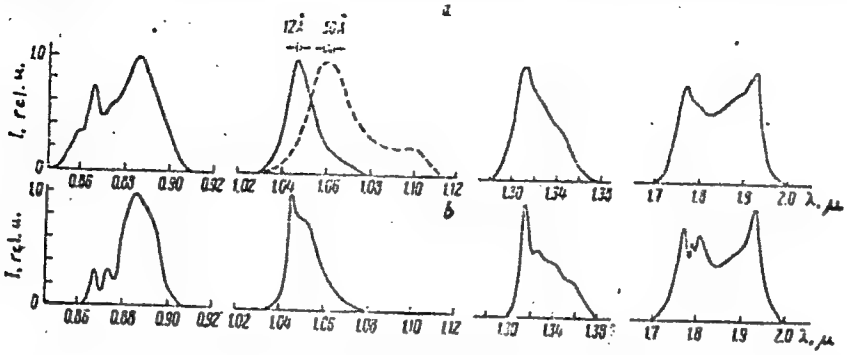

Fig. 1. Luminescence spectra of Nd^{3+} in fluoberyllate glasses at 300 (a) and 77°K (b). Intensity maxima in the various groups are normalized to unity. Broken line indicates the luminescence spectrum of Nd in silicate glass. The regions of generation of stimulated emission are marked.

comparison with spectra of Nd^{3+} in other matrices shows that although in fluoberyllate glasses the half-width of bands corresponding to transitions between the individual splitting components of the terms substantially exceeds that observed in crystals, the bands in these glasses are nevertheless much narrower than in oxygen-containing (for example, silicate) glasses. A second characteristic feature of Nd spectra (and other

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ACC NR: AP6025970

rare earth ions) in fluoberyllate glasses is the relatively small "crystalline" splitting of terms, as a result of which the groups of luminescence bands are more compact. The force of the field acting on Nd^{3+} ion in fluoberyllate glasses was found to be small. Generation of stimulated emission was observed at room temperature in cylindrical specimens 40 mm long and 3.5-5.0 mm in diameter, prepared from glass containing 2 mole % NdF_3. The spectrum of this emission consists of a large number of close narrow lines. The center of the region of generation corresponds to 10,473 Å, i. e., it is located near the maximum of the luminescence band. Thus, the region of generation in fluoberyllate glasses is shifted by more than 100 Å toward the shortwave side as compared to silicate glasses. Orig. art. has: 2 figures. [27]

SUB CODE: 20/ SUBM DATE: 12Jan66/ ORIG REF: 004/ OTH REF: 005/ ATD PRESS: 5055

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P.

Some problems in making small-scale maps. Izv.vys.ucheb.zav.; geol.i razv. 4 no.10:121-125 O '61. (MIRA 14:12)

1. Timiryazevskaya sel'skokhozyaystvennaya akademiya.
(Geology--Maps)

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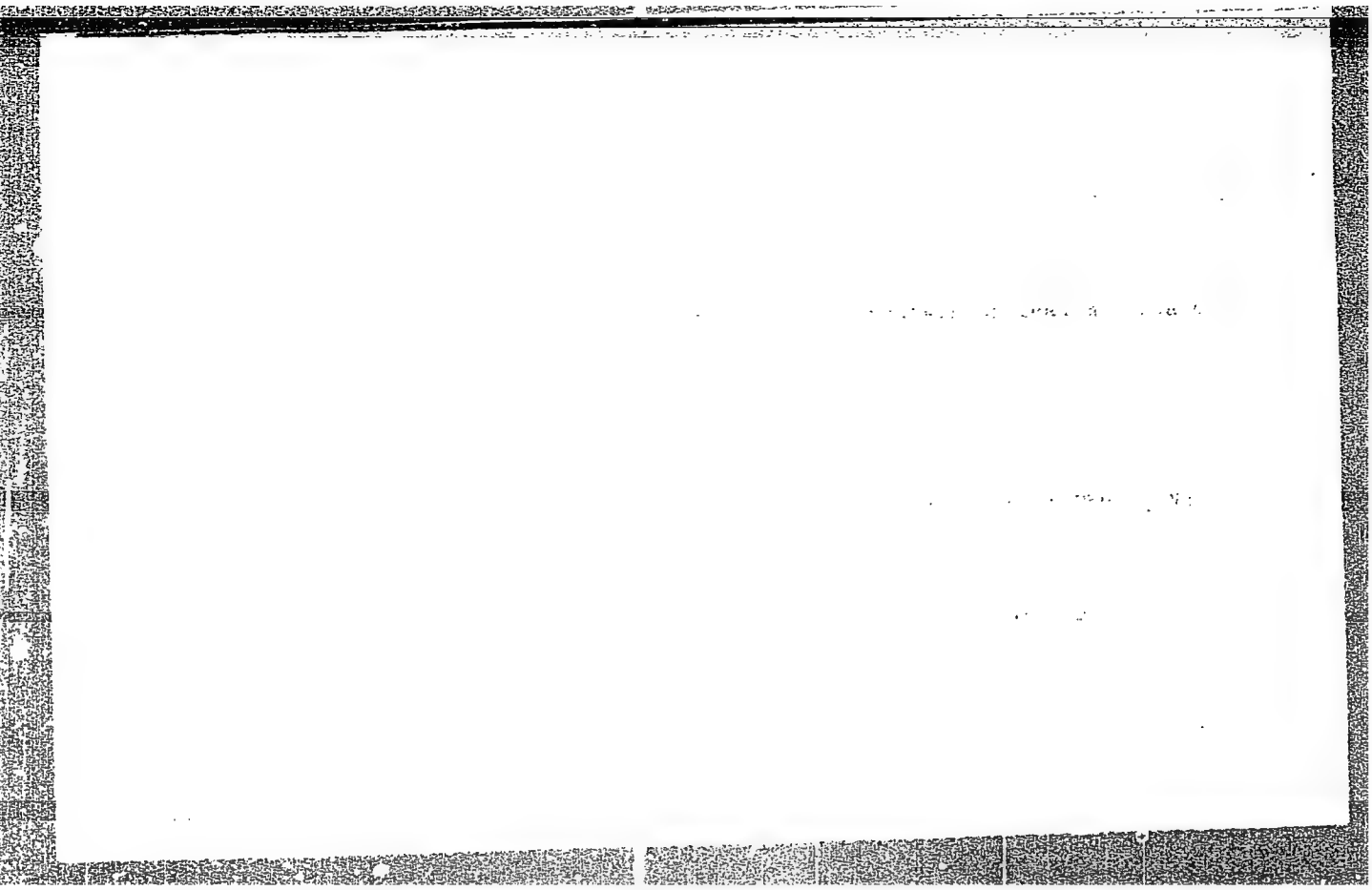

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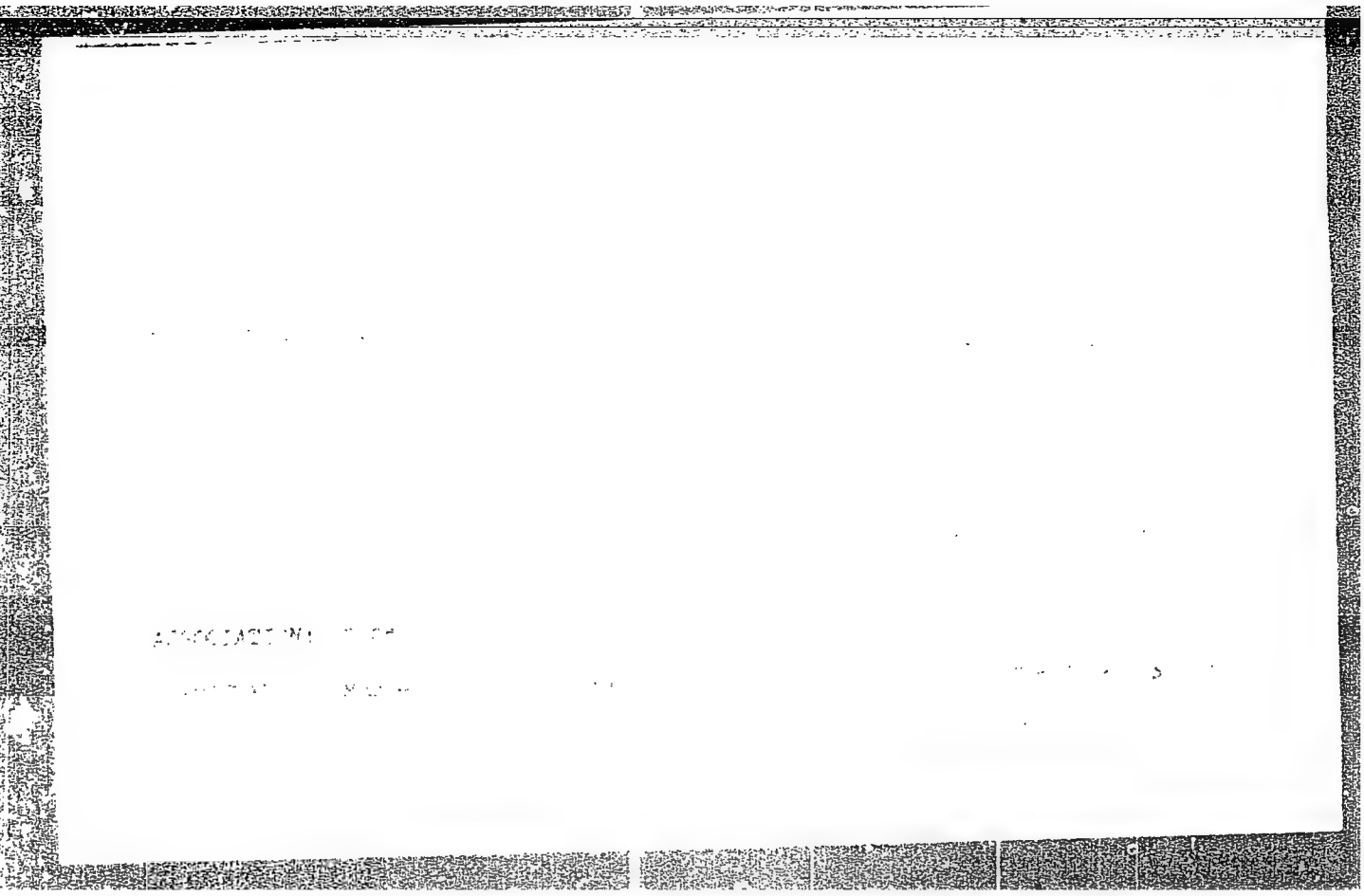

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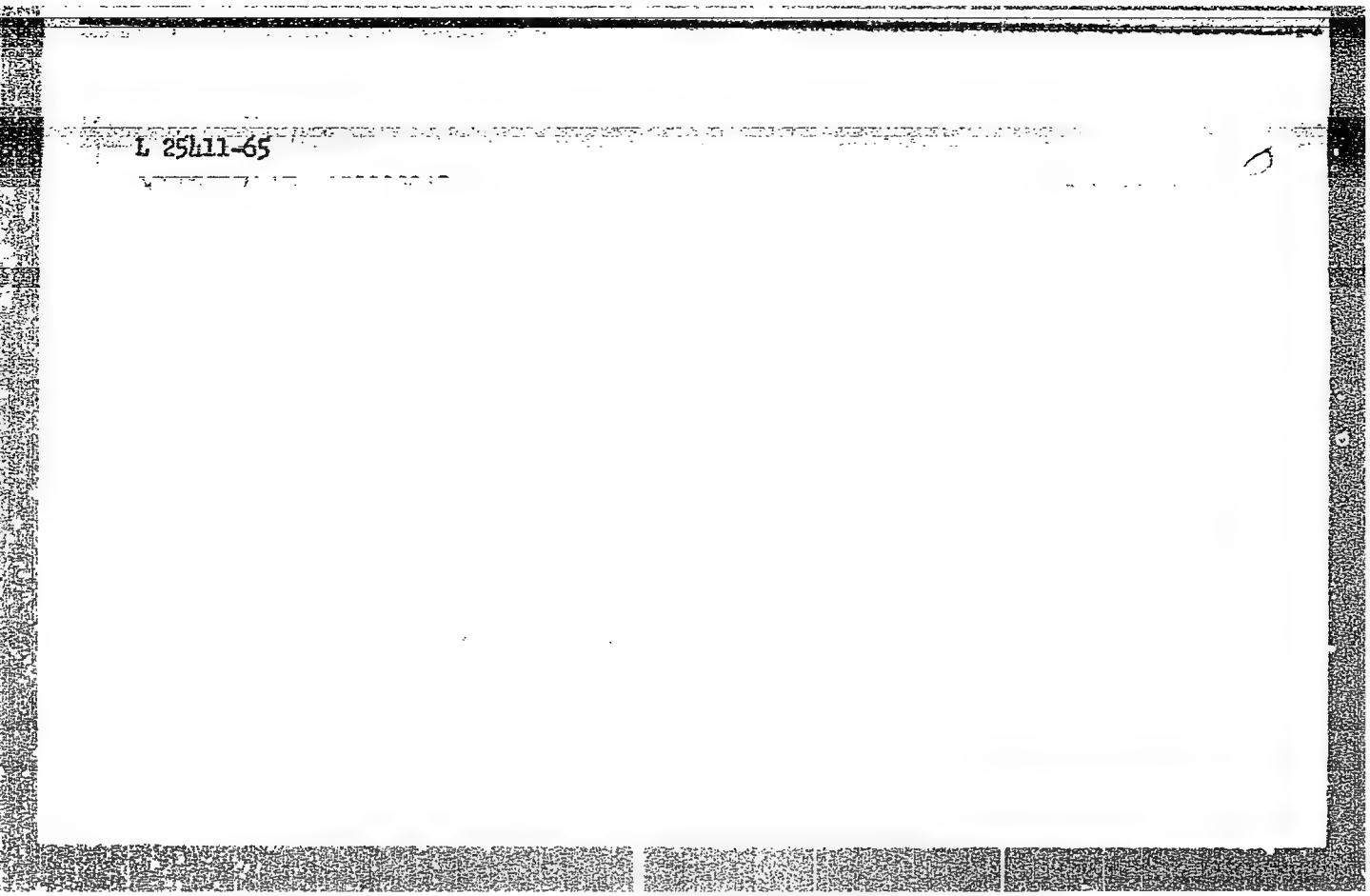

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TOLSTOY, M.P.

Department of Geology and Hydrogeology of the Timiriazev Agricultural Academy. Izv. vys. ucheb. zav.; geol. i razv. 4 no.5:102-103 My '61. (MIRA 14:6)

1. Timiryazevskaya sel'skokhozyaystvennaya akademiya.
(Moscow--Geology--Study and teaching)

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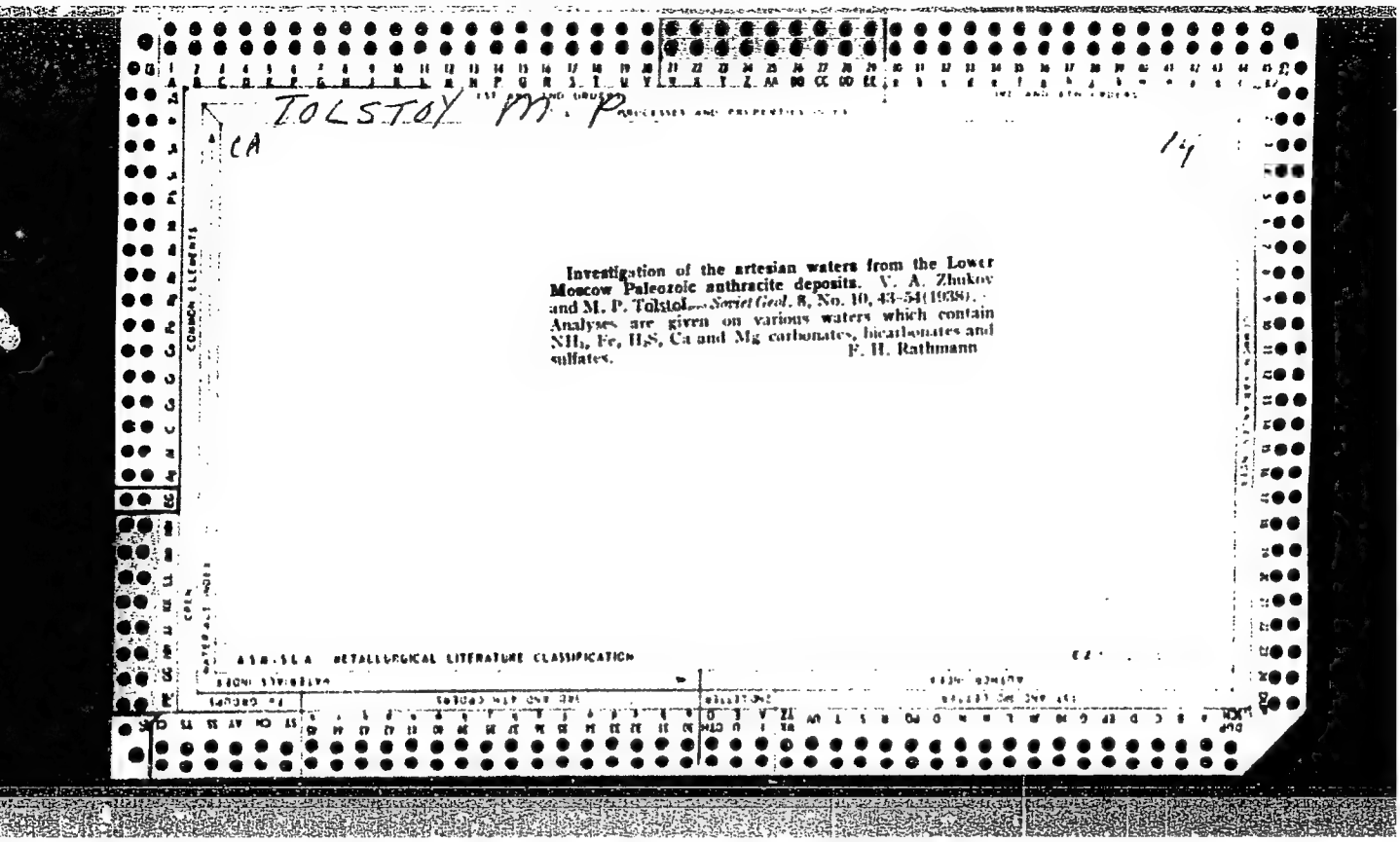

TOLSTOY M. P.

CA

14

Investigation of the artesian waters from the Lower Moscow Paleozoic anthracite deposits. V. A. Zhukov and M. P. Tolstoi. *Soviet Geol.* 8, No. 10, 43–54 (1938). Analyses are given on various waters which contain NH_3, Fe, H_2S, Ca and Mg carbonates, bicarbonates and sulfates.

F. H. Rathmann

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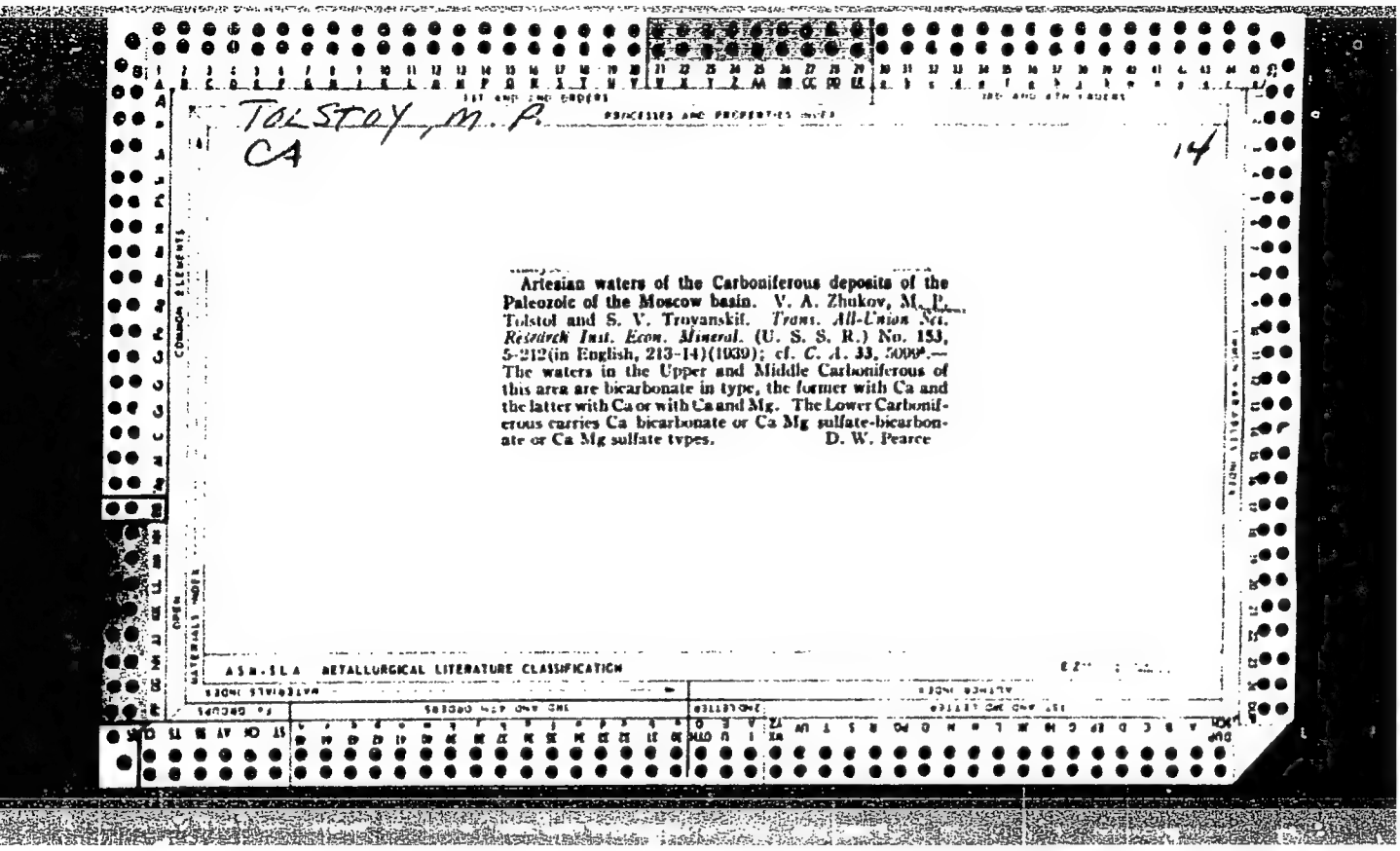

TOLSTOY, M. P.

CA

14

Artesian waters of the Carboniferous deposits of the Paleozoic of the Moscow basin. V. A. Zhukov, M. P. Tolstol and S. V. Troyanskif. *Trans. All-Union Sci. Research Inst. Econ. Mineral.* (U. S. S. R.) No. 153, 5-212(in English, 213-14)(1939); cf. *C. A.* **33**, 5009⁹.—The waters in the Upper and Middle Carboniferous of this area are bicarbonate in type, the former with Ca and the latter with Ca or with Ca and Mg. The Lower Carboniferous carries Ca bicarbonate or Ca Mg sulfate-bicarbonate or Ca Mg sulfate types. D. W. Pearce

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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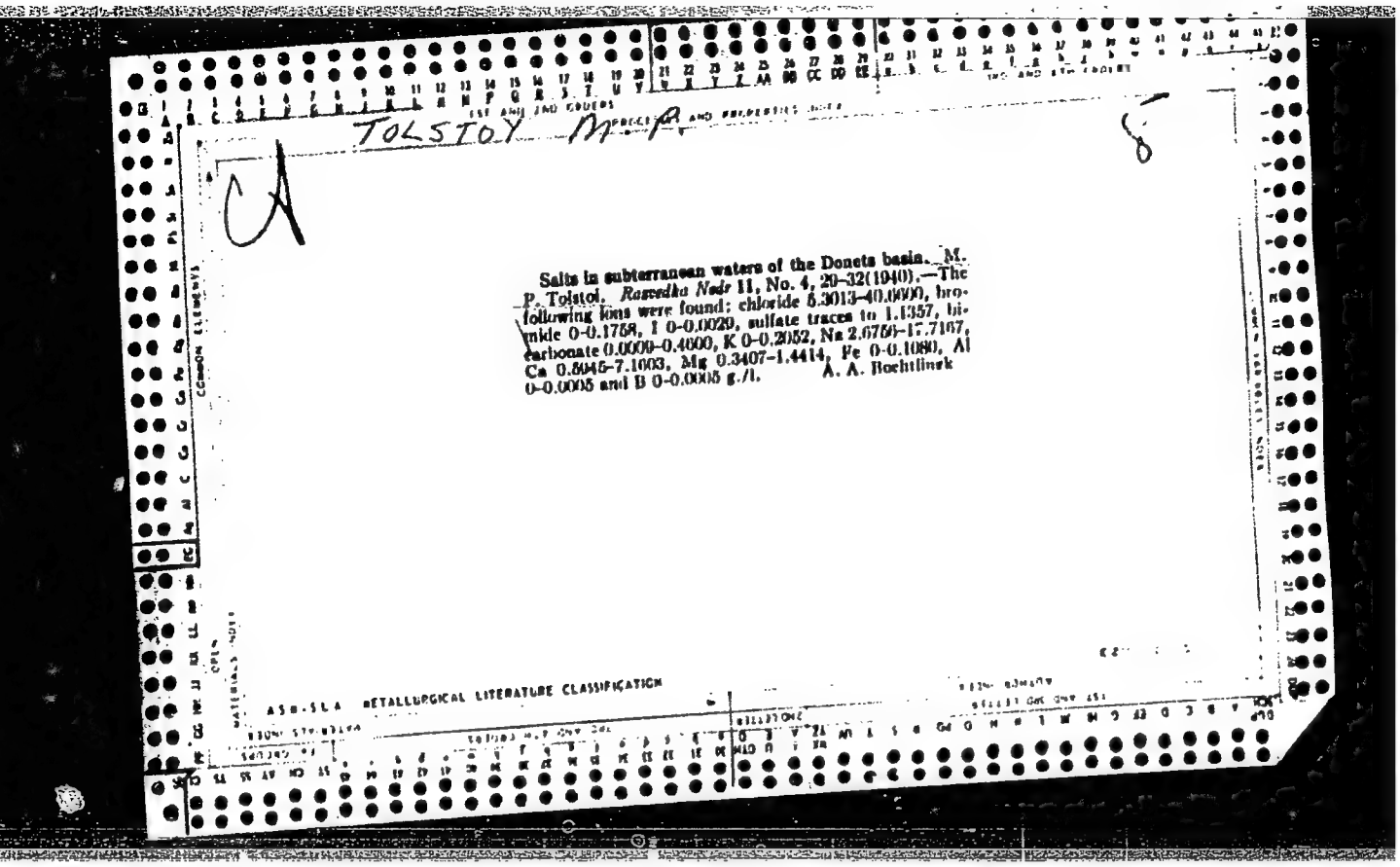
TOLSTOY Map

Salts in subterranean waters of the Donets basin. M. P. Tolstoi. *Razvedka Nedr* 11, No. 4, 20–32(1940).—The following ions were found: chloride 5.3013–40.0000, bromide 0–0.1758, I 0–0.0029, sulfate traces to 1.1357, bicarbonate 0.0009–0.4600, K 0–0.2052, Na 2.6759–17.7167, Ca 0.8945–7.1003, Mg 0.3407–1.4414, Fe 0–0.1080, Al 0–0.0005 and B 0–0.0005 g./l. A. A. Bochtlingk

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

CHARYGIN, Mikhail Mikhaylovich, prof.; TOLSTOY, K.P., prof., doktor geol.-miner. nauk, retsenzent; BEKMAN, Yu.K., ved. red.; YAKOVLEVA, Z.I., tekhn. red.

[General geology] Obshchaia geologiia. Izd.3., perer. i dop. Moskva, Gostoptekhizdat, 1963. 376 p. (MIRA 16:12)

(Geology)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

BALASHOV, L.S.; TOLSTOY, M.P.

Genesis and formation of underground waters in G.N.Kamenskii's works. Trudy Lab.gidrogeol.probl. 40:51-63 '62. (MIRA 15:11)
(Water, Underground)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P.

15-57-2-1200

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 2, pp 2-3 (USSR)

AUTHOR: Tolstoy, M. P.

TITLE: Ninetieth Anniversary of the Department of Geology and Mineralogy (90-letiye kafedry geologii i mineralogii)

PERIODICAL: Izv. Timiryazevskoy s.-kh. akad., 1955, Nr 3, pp 99-112

ABSTRACT: The department of geology and mineralogy at the Timiryazevo Agricultural Academy was organized in 1865. Its history is associated with the names of such scientists as I. B. Auerbach -- the first professor of the department; G. A. Trautschold -- chairman of the department for 22 years; A. P. Pavlov -- docent, and later a professor of the department from 1889 to 1892; Ye. S. Fedorov; Ya. V. Samoylov; M. I. Kantor, and others. The first three men are associated with a thorough study of the geological structure of the Moscow region. A. P. Pavlov worked on the basic problems of

Card 1/2

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Ninetieth Anniversary of the Department of (Cont.)

contemporary biostratigraphy, on depicting the geological structure of the Russian Plain, on the subject of the Quaternary system, and the processes leading to the formation of continental strata. Many of the classic works on crystallography were completed in the Timiryazevskaya Academy by Ye. S. Fedorov. Ya. V. Samoylav contributed much to the study and locating of mineral concentrations, particularly of phosphorites. He created a new scientific discipline--mineral fertilizers--the connecting link between geology and agriculture. M. I. Kantor dedicated much knowledge and energy to the study of the Kerchenskiye phosphoric iron ores. After his death (1946), the department was headed by A. A. Dubyanskiy, A. I. Kravtsov, and N. N. Lushchikhin.

Card 2/2 D. I. G.

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P., prof.; BONDAREV, V.P., kand.geol.-mineral.nauk

Valuable raw material for mineral fertilizers; let's make wide use of industrial waste. Priroda 53 no.8:68-73 '64. (MIRA 17:9)

1. Moskovskaya sel'skokhozyaystvennaya akademiya im. Timiryazeva.

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P.; SHCHERBAKOV, A.V.; YUDIN, S.S.; BELYAYEV, I.V.; ZADOROZHKO, L.I.; IVANOV, V.K.; KARPOVA, A.S.

Reviews. Izv. AN SSSR. Ser. geol. 30 no.7:127-133 Jl '65. (MIRA 18:7)

1. Moskovskaya ordena Lenina sel'skokhozyaystvennaya akademiya imeni Timiryazeva i Geologicheskiy institut AN SSSR (for Tolstoy, Shcherbakov). 2. TSentral'naya geologo-geofizicheskaya ekspeditsia Severo-Vostochnogo geologicheskogo upravleniya, Magadan (for Yudin, Belyayev, Zadorozhko, Ivanov, Karpova).

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P.

Underground waters of marine origin. Trudy Lab.gidrogeol.probl. 16:78-81 '58. (MIRA 12:2)

1. Sel'skokhozyaystvennaya akademiya imeni Timiryazeva.
(Water, Underground)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

15-57-8-10377

Translation from: Referativnyy zhurnal, Geologiya, 1957, Nr 8, p 2 (USSR)

AUTHOR: Tolstoy, M. P.

TITLE: Report on the Scientists Who Have Held the Chair of Geology and Mineralogy at the Timiryazevskaya Academy (Vklad v nauku uchenykh kaferdy geologii i mineralogii Timiryazevskoy akademii)

PERIODICAL: Dokl. Mosk. s.-kh. akad. im. K. A. Timiryazeva, 1956, Nr 25. pp 40-45.

ABSTRACT: The Timiryazevskaya Agricultural Academy used to be called the Petrov Farm and Forest Academy; its chair of Geology and Mineralogy was created in 1865. The first professor to hold this chair was I. B. Auerbach (1815-1867), who studied the Cretaceous deposits of the Moscow region. His sucessor was G. A. Trautshold (1817-1902), whose specialty was the basic flora and fauna of the Carboniferous, Jurassic, Cretaceous, and Quaternary

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Report on the Scientists Who Have Held the Chair (Cont.)

deposits. He demonstrated the importance of loams and alluvial soils for agriculture, and called for the utilization of mineral fertilizers. Ye. S. Fedorov held the post from 1895 to 1905. During these years he worked out the theodolitic method for use in crystallography and devised a crystallochemical analysis employing this method. Professor of the Academy, S. G. Voyslov (1850-1904), did much for the popularization of geological knowledge and for the development of oil drilling in Russia. From 1906 to 1925 the chair was occupied by Professor Ya. V. Samoylov, who was famous before the Revolution for his investigations of phosphorite deposits and who organized the Scientific Institute of Fertilizers. He was an expert on mineral fertilizers and bioliths and he opened up new fields in geology--biogeochemistry and contemporary marine geology. Samoylov's successors in this post were M. I. Kantor, Professor A. I. Kravtsov, and Docent N. N. Lushchikhin, who continued Samoylov's work on mineral fertilizers.

Card 2/2

D. I. Gordeyev

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P.

Paleozoic hydrogeology of the Russian Platform. Geol.nefti 2 no.10:54-61 O '58. (MIRA 11:11)

1. Timiryazevskaya sel'skokhozyaystvennaya akademiya.
(Russian Platform--Water, Underground)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M. P.

PA 69T52

USSR/Geology 1948
Hydrology
Tectonics

"The Hydrological Division Into Regions of Samarskiye Luki," M. P. Tolstoy, VSEGINGEO, 11 pp

"Sovet Geolog" No 28

Shows application of geologostructural principles for hydrological division of Samarskiye Luki region. Describes boundaries and general characteristics of eight regions.

FDB 69T52

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P., prof. , doktor geol.-mineral. nauk.

Geological structure and the formation of ground waters based on research done on the Apsheron Peninsula. Izv. TSKhA no.6:191-212 '58. (MIRA 12:1)

(Apsheron Peninsula--Geological research)
(Water, Underground)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P.

Nomenclature and geological conditions of mineralized underground waters. Gidrokhim.mat. 24:93-95 '55. (MIRA 9:4)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut gidrogeologii i inzhenernoy geologii, Moskva.
(Water, Underground) (Water--Analysis)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P., professor.

Against the "Palmer system" of interpretation of the chemical composition of waters. Azerb.neft.khoz. 35 no.6:4-6 Je '56.
(MLRA 9:10)

(Oil field brines)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P.

Salt mining and well drilling for the salt industry in Russia.
Trudy Inst.ist.est.i tekh. 9:73-106 '57. (MLRA 10:5)
(Salt mines and mining--History)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.

~~TOSLTOY, M.~~

Some shortcomings in discussing the history of well drilling ("Outline history of the development of the Russian petroleum industry" by S.M.Lisichkin. Reviewed byM.Tolstoi). Neft.khoz. 35 no.2:68-69 F '57. (MLRA 10:3)

(Petroleum industry--History)
(Lisichkin, S.M.)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P., prof., doktor geol.-mineral.-nauk

History of dug and bored wells in Moscow. Gor. khoz. Mosk. 32 no.5:28-30 My '58. (MIRA 11:5)
(Moscow--Wells)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P., doktor geol.-mineral. nauk.

Natural zoning is the basis of underground water subdivisions [with summary in English]. Izv. TSKhA no.1(20):201-216 '58. (MIRA 11:4)
(Water, Underground)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, Mikhail Pavlovich, prof.; ORLOVA, V.P., red.; PROKOF'YEVA, L.N., tekhn. red.; TRUKHINA, O.N., tekhn. red.

[Principles of geology and mineralogy] Osnovy geologii s mineralogiei. Moskva, Sel'khozizdat, 1962. 414 p. (MIRA 15:7)
(Geology)

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P.

Role of gravitation in the formation of underground waters.
Izv.vys.ucheb.zav.; geol.i razv. 6 no.3:87-92 Mr '63. (MIRA 16:5)

1. Moskovskaya sel'skokhozyaystvennaya akademiya imeni K.A. Timiryazeva.
(Gravity) (Water, Underground—Analysis)

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, M.P.

Underground waters in the Moscow artesian basin. Mat.po geol.i pol.iskop.tsentr.raion.evrop.chasti SSSR no.5:143-177 '62.
(MIRA 16:6)

(Water, Underground)

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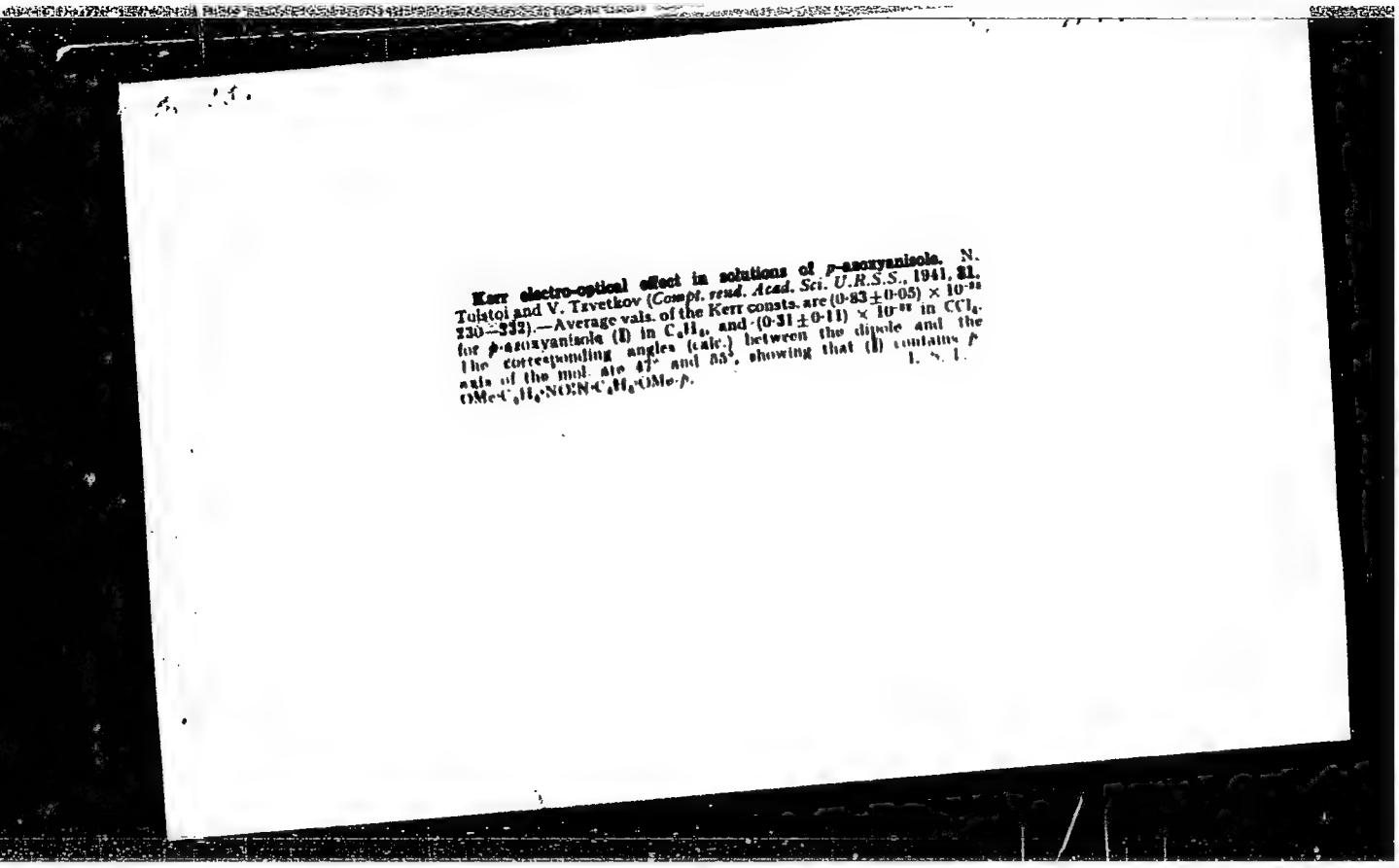

Kerr electro-optical effect in solutions of *p*-azoxyanisole. N. Tulatoi and V. Tzvetkov (*Compt. rend. Acad. Sci. U.R.S.S.*, 1941, **31**, 230—232).—Average vals. of the Kerr consts. are $(0{\cdot}83 \pm 0{\cdot}05) \times 10^{-11}$ for *p*-azoxyanisole (I) in C_6H_6, and $(0{\cdot}31 \pm 0{\cdot}11) \times 10^{-11}$ in CCl_4. The corresponding angles (calc.) between the dipole and the axis of the mol. are 47° and 55°, showing that (I) contains *p*-OMe·C_6H_4·NO:N·C_6H_4·OMe-*p*. I. S. I.

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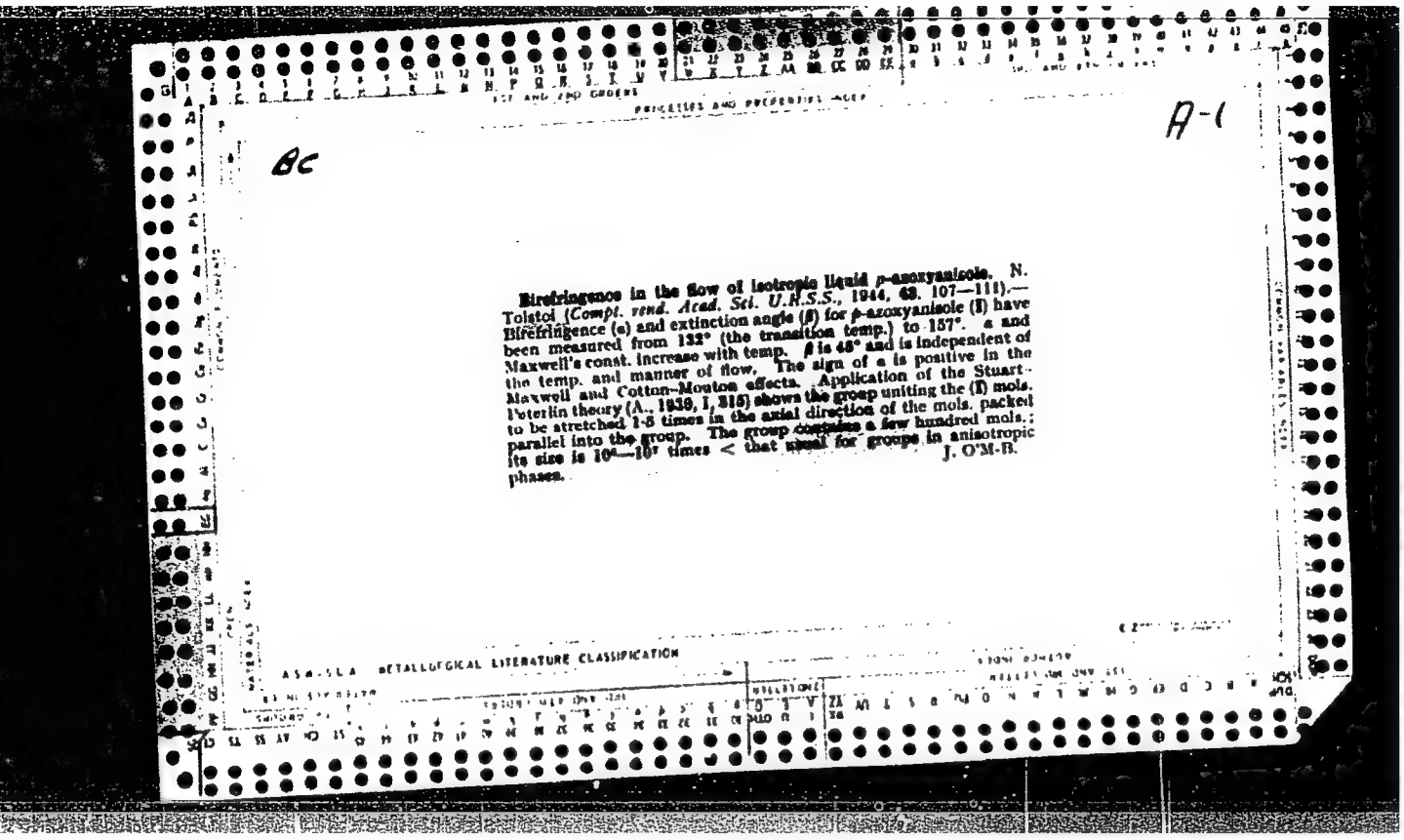

Bc

A-1

Birefringence in the flow of isotropic liquid *p*-azoxyanisole. N. Tolstoi (*Compt. rend. Acad. Sci. U.R.S.S.*, 1944, 43, 107—111).—Birefringence (a) and extinction angle (β) for *p*-azoxyanisole (I) have been measured from 132° (the transition temp.) to 157°. a and Maxwell's const. increase with temp. β is 45° and is independent of the temp. and manner of flow. The sign of a is positive in the Maxwell and Cotton–Mouton effects. Application of the Stuart–Peterlin theory (A., 1939, I, 315) shows the group uniting the (I) mols. to be stretched 1·8 times in the axial direction of the mols. packed parallel into the group. The group contains a few hundred mols.; its size is 10^{-6}—10^{-7} times < that usual for groups in anisotropic phases. J. O'M-B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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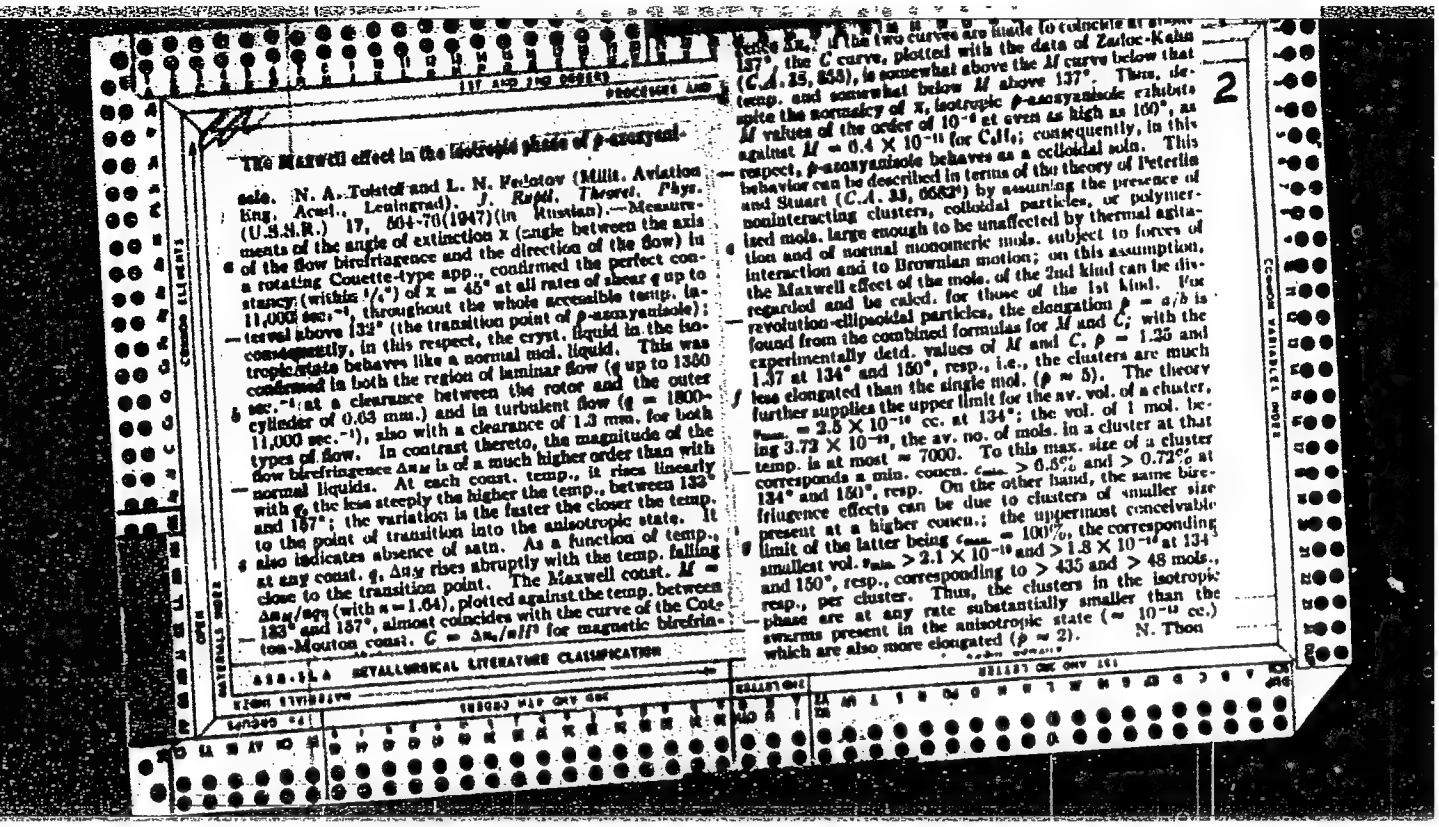

The Maxwell effect in the isotropic phase of p-azoxyanisole. N. A. Tolstoĭ and L. N. Fedotov (Mills. Aviation Eng. Acad., Leningrad). *J. Rapid. Theoret. Phys.* (U.S.S.R.) 17, 864-70(1947)(in Russian).—Measurements of the angle of extinction χ (angle between the axis of the flow birefringence and the direction of the flow) in a rotating Couette-type app., confirmed the perfect constancy (within ½°) of χ = 45° at all rates of shear q up to 11,000 sec.$^{-1}$, throughout the whole accessible temp. interval above 133° (the transition point of p-azoxyanisole); consequently, in this respect, the cryst. liquid in the isotropic state behaves like a normal mol. liquid. This was confirmed in both the region of laminar flow (q up to 1350 sec.$^{-1}$ at a clearance between the rotor and the outer cylinder of 0.03 mm.) and in turbulent flow (q = 1800-11,000 sec.$^{-1}$), also with a clearance of 1.3 mm. for both types of flow. In contrast thereto, the magnitude of the flow birefringence Δn_M is of a much higher order than with normal liquids. At each const. temp., it rises linearly with q, the less steeply the higher the temp., between 133° and 137°; the variation is the faster the closer the temp. to the point of transition into the anisotropic state. It also indicates absence of satn. As a function of temp., at any const. q, Δn_M rises abruptly with the temp. falling close to the transition point. The Maxwell const. $M = \Delta n_M/nq^2$ (with n = 1.64), plotted against the temp. between 133° and 137°, almost coincides with the curve of the Cotton-Mouton const. $C = \Delta n_m/nH^2$ for magnetic birefringence Δn_m, if the two curves are made to coincide at 137°, the C curve, plotted with the data of Zaitoc-Kahn (*C.A.* 35, 858), is somewhat above the M curve below that temp. and somewhat below M above 137°. Thus, despite the normalcy of χ, isotropic p-azoxyanisole exhibits M values of the order of 10^{-6} at even as high as 160°, as against $M = 0.4 \times 10^{-11}$ for CS_2; consequently, in this respect, p-azoxyanisole behaves as a colloidal soln. This behavior can be described in terms of the theory of Peterlin and Stuart (*C.A.* 33, 6582[9]) by assuming the presence of noninteracting clusters, colloidal particles, or polymerized mols. large enough to be unaffected by thermal agitation and of normal monomeric mols. subject to forces of interaction and to Brownian motion; on this assumption, the Maxwell effect of the mols. of the 2nd kind can be disregarded and be calcd. for those of the 1st kind. For revolution-ellipsoidal particles, the elongation $\rho = a/b$ is found from the combined formulas for M and C; with the experimentally detd. values of M and C, $\rho = 1.35$ and 1.37 at 134° and 150°, resp., i.e., the clusters are much less elongated than the single mol. ($\rho \approx 5$). The theory further supplies the upper limit for the av. vol. of a cluster, $v_{max.} = 2.5 \times 10^{-18}$ cc. at 134°; the vol. of 1 mol. being 3.72×10^{-22}, the av. no. of mols. in a cluster at that temp. is at most ≈ 7000. To this max. size of a cluster corresponds a min. concn. $c_{min.} > 0.6\%$ and $> 0.72\%$ at 134° and 150°, resp. On the other hand, the same birefringence effects can be due to clusters of smaller size present at a higher concn.; the uppermost conceivable limit of the latter being $c_{max.} = 100\%$, the corresponding smallest vol. $v_{min.} > 2.1 \times 10^{-19}$ and $> 1.8 \times 10^{-19}$ at 134° and 150°, resp., corresponding to > 435 and > 48 mols., resp., per cluster. Thus, the clusters in the isotropic phase are at any rate substantially smaller than the swarms present in the anisotropic state (≈ 10^{-17} cc.) which are also more elongated ($\rho \approx 2$). N. Thon

A48-11A METALLURGICAL LITERATURE CLASSIFICATION

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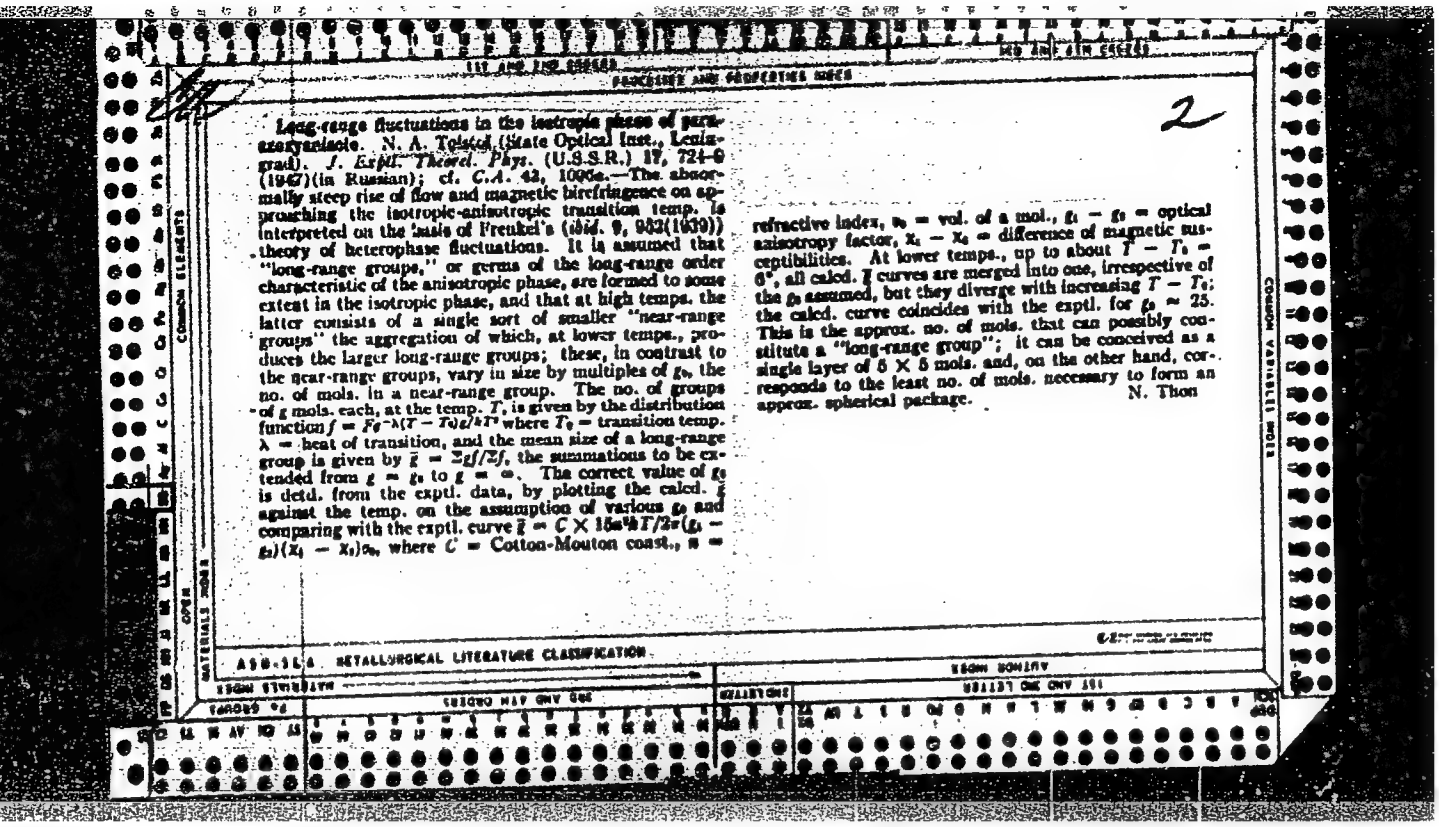

PROCESSES AND PROPERTIES INDEX

2

Long-range fluctuations in the isotropic phase of paraazoxyanisole. N. A. Tolstoi (State Optical Inst., Leningrad). *J. Exptl. Theoret. Phys.* (U.S.S.R.) 17, 724–9 (1947)(in Russian); cf. *C.A.* 42, 1096e.—The abnormally steep rise of flow and magnetic birefringence on approaching the isotropic-anisotropic transition temp. is interpreted on the basis of Frenkel's (*ibid.* 9, 952(1939)) theory of heterophase fluctuations. It is assumed that "long-range groups," or germs of the long-range order characteristic of the anisotropic phase, are formed to some extent in the isotropic phase, and that at high temps. the latter consists of a single sort of smaller "near-range groups" the aggregation of which, at lower temps., produces the larger long-range groups; these, in contrast to the near-range groups, vary in size by multiples of g_0, the no. of mols. in a near-range group. The no. of groups of g mols. each, at the temp. T, is given by the distribution function $f = Fg^{-\lambda(T-T_0)g/kT^2}$ where T_0 = transition temp. λ = heat of transition, and the mean size of a long-range group is given by $\bar{g} = \Sigma gf/\Sigma f$, the summations to be extended from $g = g_0$ to $g = \infty$. The correct value of g_0 is detd. from the expt. data, by plotting the calcd. $\bar{g}$ against the temp. on the assumption of various g_0 and comparing with the exptl. curve $\bar{g} = C \times 15\pi^{3/2}T/2\pi(g_1 - g_2)(\chi_1 - \chi_2)\sigma_0$, where C = Cotton-Mouton coast., n = refractive index, σ_0 = vol. of a mol., $g_1 - g_2$ = optical anisotropy factor, $\chi_1 - \chi_2$ = difference of magnetic susceptibilities. At lower temps., up to about $T - T_0 = 6°$, all calcd. $\bar{g}$ curves are merged into one, irrespective of the g_0 assumed, but they diverge with increasing $T - T_0$; the calcd. curve coincides with the exptl. for $g_0 = 25$. This is the approx. no. of mols. that can possibly constitute a "long-range group"; it can be conceived as a single layer of 5 × 5 mols. and, on the other hand, corresponds to the least no. of mols. necessary to form an approx. spherical package.

N. Thon

A 50-51 A METALLURGICAL LITERATURE CLASSIFICATION

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A.

Jul 1947

USSR/Physics
Refraction, Double
Mensuration

"A New Method of Measuring Double Refraction by Means of the Half-Shadow Method," N. A. Tolstoy, State Optical Inst, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVII, No 2

Gives two basic methods for measuring double refraction: 1) extinguishing method, and 2) half-shadow method, briefly describing characteristics of second method. Submitted by Academician S. I. Vavilov, 23 Jan 1947.

60T104

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY N. A.

PA 49T94

USSR/Physics
Luminescent Materials
Oscillographs - Damping

Oct 1947

"Study of the Damping of Luminescence With the Aid of a Cathode Oscillograph," N. A. Tolstoy, P. P. Feyofilov, Lab Luminescence, State Opt Inst, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LVIII, No 3

Discuss several methods for quantitative study of the damping of luminescent material on periods of damping. These periods vary from 10^{-1} to 10^{-5} seconds, i.e., the interval during which Becqerel's phosphoroscope can be used. Submitted by Academician S. I. Vavilov, 13 Mar 1947.

49T94

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A.

USSR/Physics
Luminescence
Glass

11 Jan 1948

"Loss of Luminescence by Types of Glass and Uranyl Salts," N. A. Tolstoy, P. P. Feofilov, Luminescence Lab, State Opt Inst, 4 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 2

PA 43/43T101

Presents some results of use of new method to study attenuation of luminescence. Gist of method is development of curve of intensity of luminescence according to the exponential law in time on screen of cathode oscillograph. By varying the exponent of the converter, straight line produced on the screen indicating identical nature of the law of attenuation.

43T101

USSR/Physics (Contd)

11 Jan 1948

43T101

tion of studied luminescence with the law of the converter. Submitted by Academician S. I. Vavilov, 9 Nov 1947.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A.

PA 51T96

USSR/Physics
Liquids - Flow 21 Mar 1948
Refraction, Double

"Theory of Double Refraction in a Flow," N. A. Tolstoy, Phys Inst imeni P. N. Lebedev, Acad Sci USSR, 3½ pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LIX, No 9 p. 1563-6

Shows that regularities of double refraction and the angle of attenuation in liquid current on which electrical field is acting (the Kerr effect along with the Maxwell effect) makes it possible to choose between theories of the Raman-Krishnan and the Peterlin-Stuart type. Submitted by Academician S. I. Vavilov, 21 Jan 1948.

51T96

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

USSR/Physics
Light - Measurements
Optics, Physical

Apr 1948

"One Possibility of an Equation of Depth of Modulation in the Kerr Effect," N. A. Tolstoy, P. P. Feofilov, State Opt Inst, 3 pp

"Dok Akad Nauk SSSR, Nova Ser" Vol LX, No 2

Describes fundamentals of method for measuring Kerr effect. Presents method for calculating intensity of the light passing through the analyzer. Submitted by Academician S. I. Vavilov, 18 Feb 1948.

62T97

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A.

PA 42/49T82

USSR/Physics
Luminescence
Luminophors

Mar/Apr 49

"New Methodology in Investigating the Processes of Excitation and Quenching in Luminescence," N. A. Tolstoy, P. P. Feofilov, State Opt Inst, 7 pp

"Iz Ak Nauk SSSR, Ser Fiz" Vol XIII, No 2

Develops a general method to study relaxation processes based on use of P-form excitation and plotting of studied process as an exponential function of time instead of a linear function of [redacted] 42/49T82

USSR/Physics (Contd) Mar/Apr 49

time. Gives curves showing excitation and quenching of luminescence in luminophors plotted along an exponential time scale.

42/49T82

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CA

Kerr effect in dilute solutions of p-azoxyanisole and p-azoxyphenetole. N. A. Tolstoi. *Zhur. Eksptl. Teoret. Fiz.* 19, 319-27(1949).—The available body of facts relative to the anisotropy of the dielec. const. in liquid crystals, in particular the results of Kast (*C.A.* 22, 912; 25, 5807), W. Mayer (*Ann. Physik* 33, 210(1938)), Marinin and Tsvetkov (*C.A.* 34, 4625⁴), etc., leaves no doubt about their greater polarizability perpendicularly to the axis, but the question of the position of the permanent dipole moment relative to the mol. remains open. An answer was provided by measurements of the Kerr const. $K = (n_p - n_s)/nE^2$, where n, n_p, n_s, are, resp., the mean, longitudinal, and transverse n, and E = elec. field strength. From the Langevin-Born theory of the Kerr effect, it follows that, with $K^{max.}$ and $K^{min.}$ denoting, resp., the Kerr const. corresponding to the dipole moment oriented parallel and perpendicular to the axis of the mol., the angle α between the dipole moment and the axis is given by $\alpha = \text{arc cot } \sqrt{(K - K^{min.})/(K^{max.} - K)}$. In soln., the Kerr const. K_2^s per 1 mol. is related to the Kerr const. K of the soln., of the solvent (K_1), and the Kerr const. K_2^∞ per 1 mol. of the solvent, by $K_2^\infty = (1/\eta N)[(K - K_1)M_1/\rho_1 + K_2 M_2/\rho_2]$, where η = viscosity of the soln., ρ = d., M = mol. wt., and N = Avogadro's no. Measurements on p-azoxyanisole (I) in soln. in C_6H_6 confirmed the linearity between K and E^2, and the pos. sign of K for I, the Kerr effect of the soln. being 15% greater than of the pure solvent. In solns. in C_6H_6, with η varying from 0.0071 to 0.0187, the value for I is, independently of the concn., $K_2^\infty = (3.7 \pm 0.2) \times 10^{-12}$, and in soln. in CCl_4 (η varying from 0.0044 to 0.0108) $K_2^\infty = (4.5 \pm 0.9) \times 10^{-12}$; for p-azoxyphenetole in C_6H_6, $K_2^\infty = (1 \pm 0.2) \times 10^{-12}$. With the known values of the sp. refractions and polarizabilities, one finds, by the Langevin-Born formulas, for I, $K_2^{\infty(max.)} = 23.3 \times 10^{-12}$, $K_2^{\infty(min.)} = -7.12 \times 10^{-12}$, and, consequently, $\alpha = 58°$ (in C_6H_6) and $\alpha = 57.3°$ (in CCl_4); for II, in C_6H_6 soln., $\alpha = 60.5°$. In this range, α is relatively little sensitive to the value of K_2^∞, and an error in the latter has consequently little effect on α. The result means that the dipole moment is neither parallel nor perpendicular to the axis of the mol., but forms an angle of the order of 45° with the azoxy group. Consequently, the dipole moment has a substantial component in the direction perpendicular to the axis. This bears out Tsvetkov's (*Acta Physicochim. U.R.S.S.* 3, 905, 879(1935); *Izvest. Akad. Nauk S.S.S.R., Ser. fiz.* 5, 57(1941)) interpretation of the large elec. polarizability of anisotropic liquid I in a swarm, which merely calls for the existence of a perpendicular component, but is not inconsistent with a parallel component of the dipole moment. Inasmuch as a swarm as a whole has no dipole moment, the mols. in it are disposed as frequently with the longitudinal component in one as in the opposite direction. An elec. field perpendicular to the axes of the mols. will tend to split the swarm at points where neighboring mols. have antiparallel longitudinal components, and this effect will be particularly strong between 2 groups of mols. parallel within each group but antiparallel from one group to another. Consequently, application of an elec. field may result in a shake-up of the existing swarm pattern into a new swarm array. N. T.

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TOLSTOY, N. A.

USSR/Physics
Relaxation Phenomena
Oscillographs

May 49

"New Method of Studying Relaxation Processes," N. A. Tolstoy, P. P. Feofilov, State Optical Inst, 10 pp

"Zhur Eksper i Teoret Fiz" Vol XIX, No 5

PA 46/49T99

Describes new oscillographic method of studying relaxation of physical processes, based on the use of nonlinear graphing. Method is applicable to processes occurring in the time interval 10^{-6}-10^{-1} sec. In the case of relaxation taking place according to the exponential law (exp -t/tau), value of tau may be determined after several seconds. Generalization of method, called "the method of partial time," is applicable to processes in which relaxation occurs according to any law. Submitted 6 Nov 48.

46/49T99

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A. Dec 49

USSR/Physics - Dielectric Constants
Polarization, Relaxation

"Application of the New Method for Studying Relaxation Processes to a Study of Relaxation Polarization in Dielectrics," G. I. Skanavi, N. A. Tolstoy, P. P. Feofilov, K. I. Lebedev, Phys Inst imeni Lebedev, Acad Sci USSR, 9 pp

"Zhur Eksper i Teoret Fiz" Vol XIX, No 12 p. 1121-9

To study relaxation polarization in dielectrics of titanium dioxide with small additions of oxides of metals belonging to the second group of the periodic table (this group gives very high values of e in the region of low frequencies), one employs the oscillographic method of studying, by electrical square-wave impulses through ohmic resistances, the charge and discharge of the condensers containing the dielectric under study. Here a simple exponential development of the process in time is employed, as well as more complicated ones. Shows charge and discharge processes of the condenser with the dielectric under study have a complex character differing from the exponential. Equivalent circuit schemes are found for the dielectrics under study. Parameters of these schemes are determined experimentally. Calculation of these equivalent schemes permits one to obtain the function of current drop with time in each studied dielectric with calculated constants and thus to evaluate values of initial currents. Submitted 23 Jun 49

PA 152T87

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A.

Jan 49

USSR/Physics
Phosphors
Luminescence

"A Study of the Initial Stages of Luminescence and Extinguishing in Zinc-Sulfide Phosphors with the Aid of an Oscillographic Phosphoroscope," V. A. Arkhangel'skaya, A. M. Bonch-Bruyevich, N. A. Tolstoy, P. P. Feofilov, 4 pp

"Dok Ak Nauk SSSR" Vol LXIV, No 2 pp. 187-90

Partial results obtained during study of crystallic phosphors by the "partial time" method. Method allows studies to be conducted in the time interval 10-5-10-1 seconds. suitable for investigating the little-studied initial stages of extinguishing, and the completely unstudied stages of crystallic phosphors bursting into luminescence. Submitted 5 Nov 48.

PA 25/49T99

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

IA 52/49T105

TOLSTOY, N.A.

USSR/Physics May 49
Photoconductivity
Bismuth Compounds

"Initial Stages of Relaxation in the Photoconductivity of Bi_2S_3," D. B. Gurevich, N. A. Tolstoy, P. P. Feofilov, 4 pp

"Dok Ak Nauk SSSR" Vol LXVI, No 3, 365-8

Shows that the hyperbilic (Becquerel's) law, hitherto considered typical of relaxation of crystallophosphors, also holds good for relaxation of photoconductivity. Notes other similarities. Submitted by Acad S. I. Vavilov, 25 Mar 49

52/49T105

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

PA 46/49T89

USSR/Physics
Optics
Colloids

Jun 49

"Certain Electro-Optical Phenomena in Colloids," N. A. Tolstoy, P. P. Feofilov, State Opt Inst, 4 pp

"Dok Ak Nauk SSSR" Vol LXVI, No 4

Studied electrical double refraction and electrical dichroism of colloids using (1) optical arrangement with a Kerr cell, (2) voltage sources, changing according to a special law, (3) obturator, and (4) photoelement, amplifier, and cathode oscilloscope. Tested water solutions of bentonite,

46/49T89

USSR/Physics (Contd)

Jun 49

benzopurpurin, graphite, anisaldazin, n-azoxyanisole, and other liquid crystals. Submitted by S. I. Vavilov, 25 Mar 49.

46/49T89

TOLSTOY, N. A.

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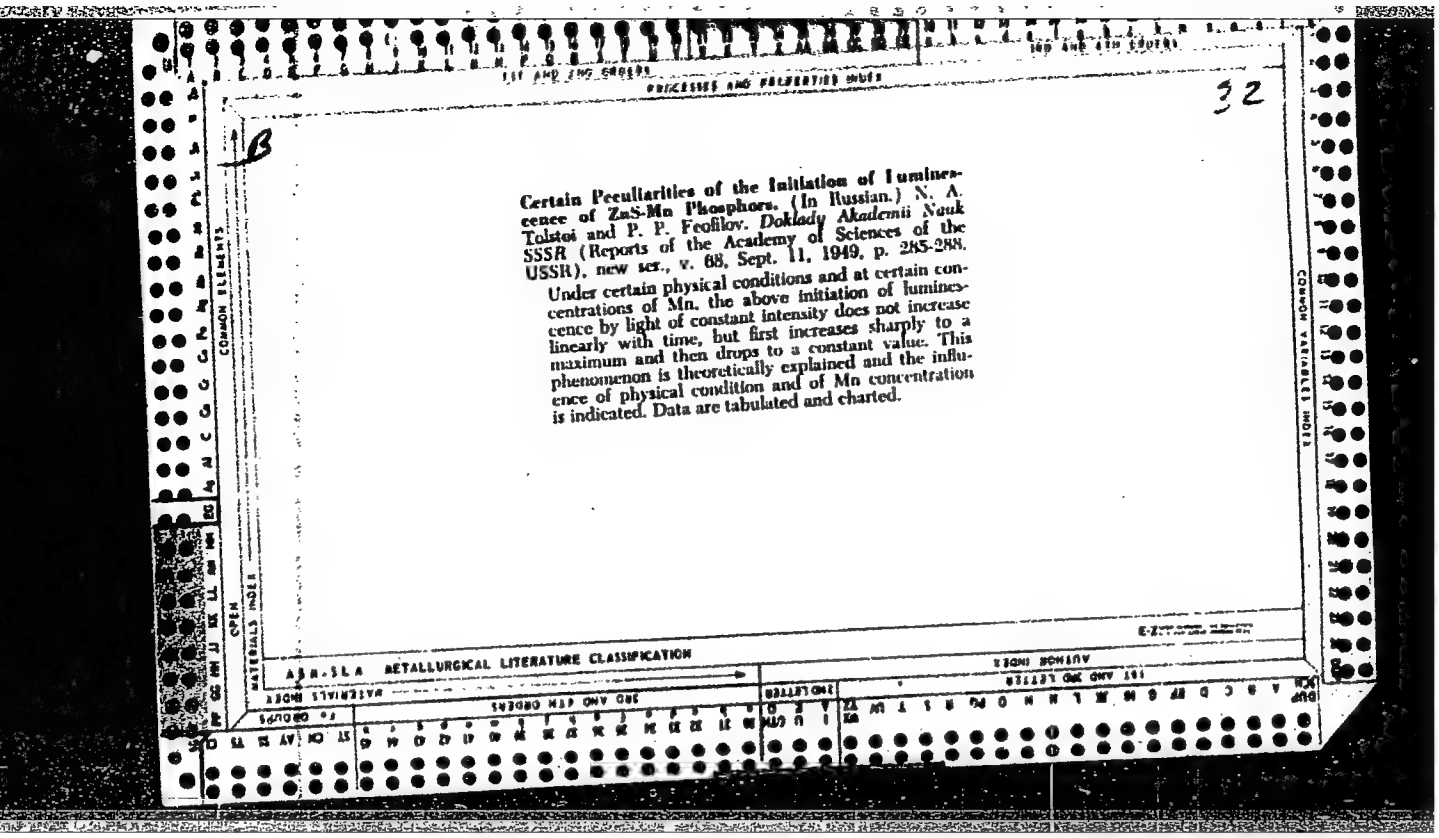

32

Certain Peculiarities of the Initiation of Luminescence of ZnS-Mn Phosphors. (In Russian.) N. A. Tolstoi and P. P. Feofilov. *Doklady Akademii Nauk SSSR* (Reports of the Academy of Sciences of the USSR), new ser., v. 68, Sept. 11, 1949, p. 285-288.

Under certain physical conditions and at certain concentrations of Mn, the above initiation of luminescence by light of constant intensity does not increase linearly with time, but first increases sharply to a maximum and then drops to a constant value. This phenomenon is theoretically explained and the influence of physical condition and of Mn concentration is indicated. Data are tabulated and charted.

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A.

168T95

USSR/Physics - Photoconductivity Sep 50
Semiconductors

"Relaxation of Photoconductivity in Semiconductors," D. B. Gurevich, N. A. Tolstoy, P. P. Feofilov

"Zhur Eksper i Teoret Fiz" Vol XX, No 9, pp 769-782

Employs new method to study relaxation of photoconductivity in number of semiconductors for different illumination and temperature. Established existence of two classes of photoresistances, hyperbolic and exponential. Submitted 3 Feb 50.

[redacted] 168T95

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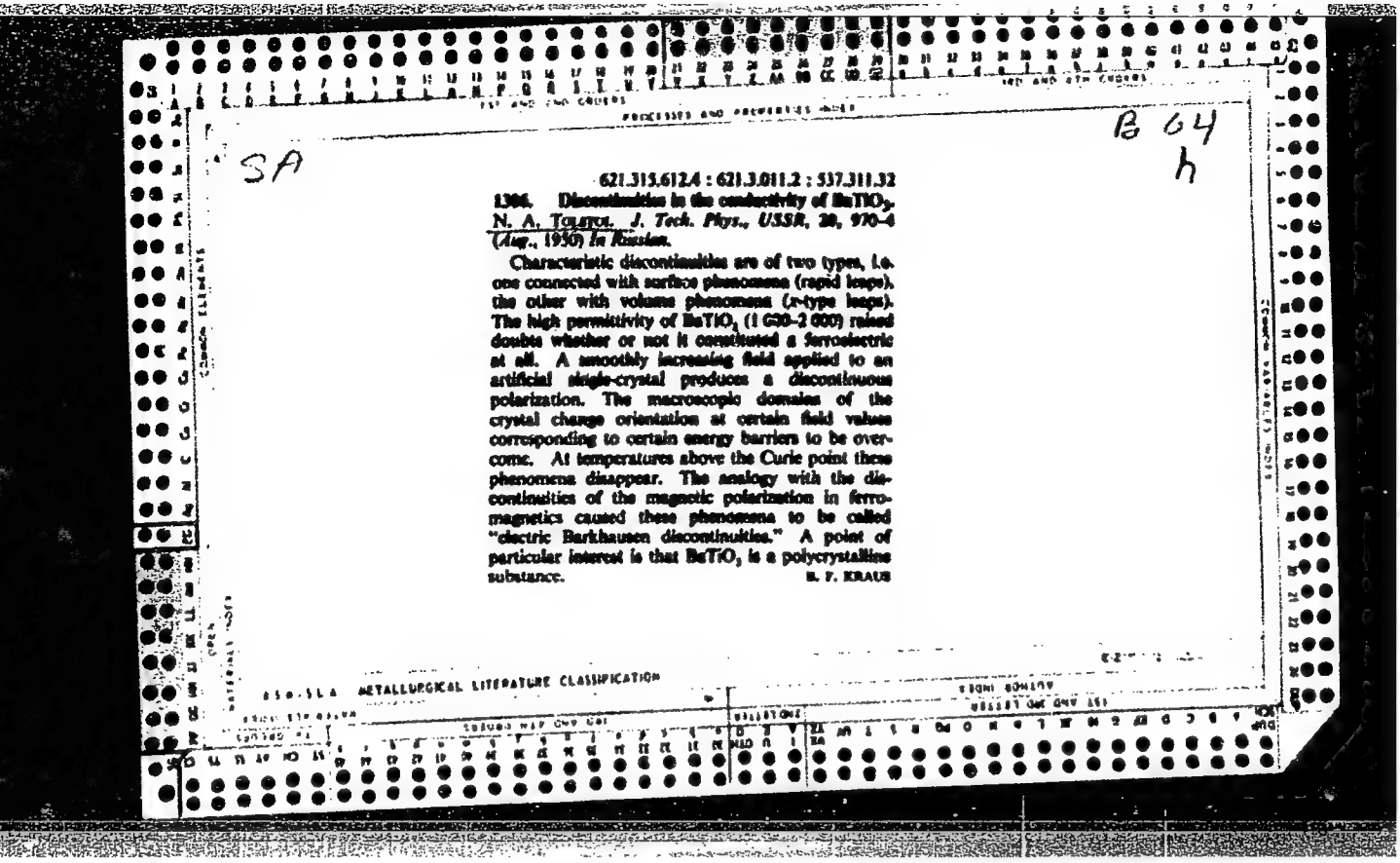

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621.315.612.4 : 621.3.011.2 : 537.311.32

1306. **Discontinuities in the conductivity of $BaTiO_3$.** N. A. Tolstoi. *J. Tech. Phys., USSR*, 20, 970–4 (*Aug.*, 1950) *In Russian.*

Characteristic discontinuities are of two types, i.e. one connected with surface phenomena (rapid leaps), the other with volume phenomena (*s*-type leaps). The high permittivity of $BaTiO_3$ (1 000–2 000) raised doubts whether or not it constituted a ferroelectric at all. A smoothly increasing field applied to an artificial single-crystal produces a discontinuous polarization. The macroscopic domains of the crystal change orientation at certain field values corresponding to certain energy barriers to be overcome. At temperatures above the Curie point these phenomena disappear. The analogy with the discontinuities of the magnetic polarization in ferromagnetics caused these phenomena to be called "electric Barkhausen discontinuities." A point of particular interest is that $BaTiO_3$ is a polycrystalline substance.

B. F. KRAUS

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A.

USSR/Physics - Phosphors Photoconductivity Nov 50

"Comparison of Photoconductivity Relaxation," D. B. Gurevich, N. A. Tolstoy, P. P. Feofilov

"Zhur Eksper i Teoret Fiz" Vol XX, No 11, pp 1039-1046

Compares experimental laws governing kinetics of photoconductivity with experimental laws governing kinetics of luminescence. Establishes parallelism of these laws.

Calculates luminescence relaxation of cadmium sulfide from its photoconductivity relaxation. Submitted 4 Apr 50.

PA 169T107

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

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3

New method of investigation of relaxation processes and its application to the study of some physical processes. N. A. Tolstoi and P. P. Feofilov. *Uspekhi Fiz. Nauk* 41, 44–107(1950).—Review, particularly of the authors' own work on rectilinear oscillography of the decay of phosphorescence, photocond., etc. 33 references. N. Thon

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A.

USSR/Physics - Luminescence
Conductivity, Photo-

1 Mar 50

"Luminescence and Photoconductivity of Cadmium Sulfide," D. V. Gurevich, N. A. Tolstoy, P. P. Feofilov

"Dok Ak Nauk SSSR" Vol LXXI, No 1, pp 29-32

Investigated kinetics of luminescence and photoconductivity, carried out by method of "taumeter" (tau— life span or duration) on CdS monocrystals. Mathematically discusses phosphorescence relaxation and so-called "nonlinear" photoconductivity. Taumeter was described in ZhETF 19, 421, 1949, and "Iz Ak Nauk SSSR, Ser Fiz," 13, 211, 1949, by Tolstoy et al. Submitted 3 Jan 50 by Acad S. I. Vavilov.

PA 165T75

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

PA 175T83

USSR/Physics - Photoconductivity 21 May 50

"Magnitude of Dark Conductivity as a Criterion of Stationary and Relaxation Properties of Photoconductivity," D. B. Gurevich, N. A. Tolstoy

"Dok Ak Nauk SSSR" Vol LXXII, No 3, pp 473-476

Semiconductive photoconductive cells are divided into 2 classes: (1) exponential and (2) hyperbolic. The 1st are substances whose relaxation of photocond is $\Delta\sigma \sim E \cdot \exp(-t/T)$; and the 2d, $\Delta\sigma \sim E \cdot (1-\exp(-t/T))$. Here, stationary photocond $\Delta\sigma_0$ is proportional to illumination E, and relaxation time T is independent of E. Generalizes here the above 2 basic

175T83

USSR/Physics - Photoconductivity (Contd) 21 May 50

relations, to find more complicated relations among $\Delta\sigma_0$, $\Delta\sigma$, E, t, T. Submitted 23 Mar 50 by Acad S. I. Vavilov.

175T83

TOLSTOY, N. A.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

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1. ARKHANGEL'SHAYA, V. A.; BONCH-BRUYEVICH, A. M.; TOLSTOY, N. A.

2. USSR (600)

4. Phosphorescence

7. Kinetics of beginning stages of relaxation of induced phenomena in crystallophosphors and semi-conductors. Izv. SSR. Ser.fiz. 15 no.6, 1951., p. 695-706

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

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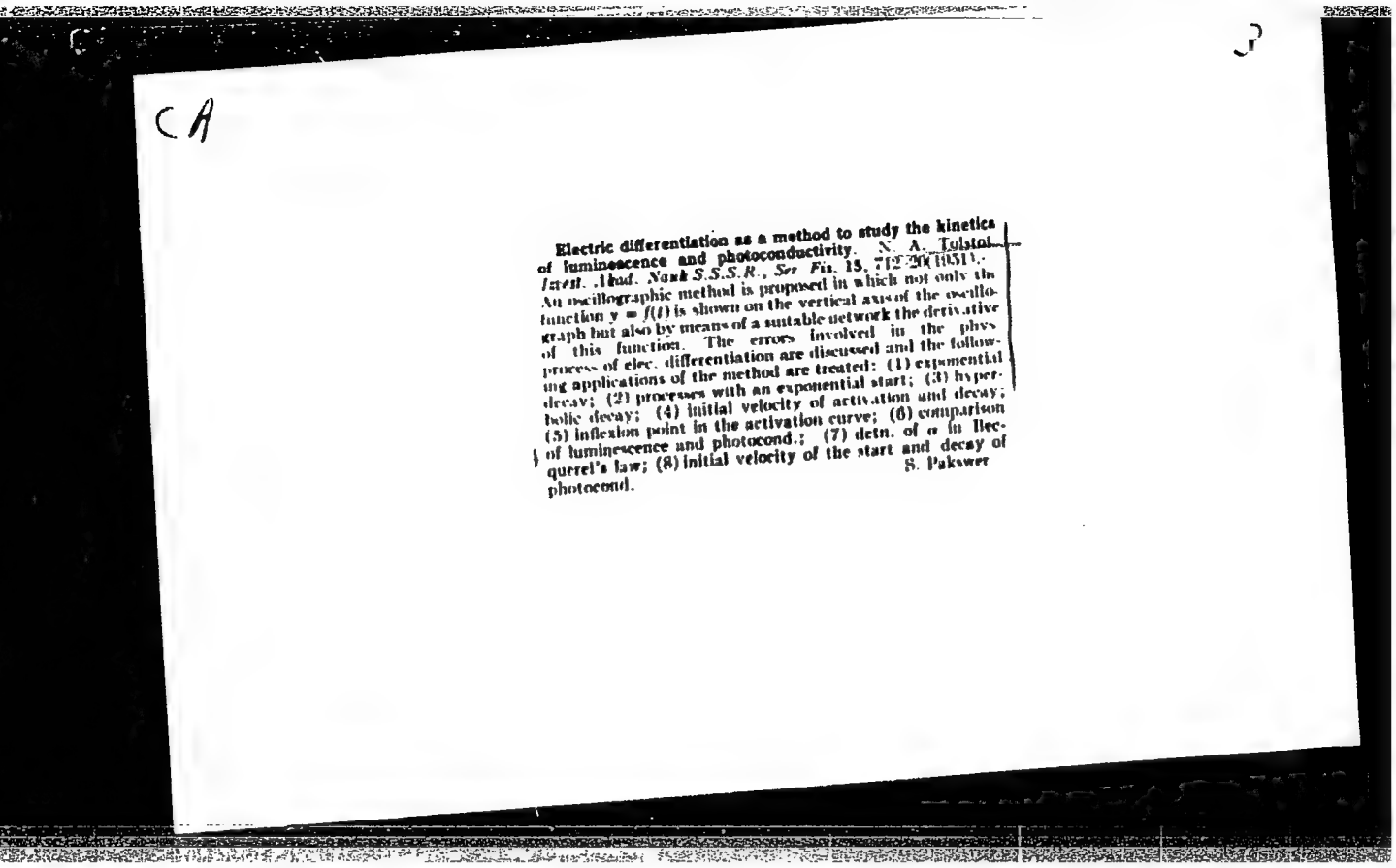

CA

Electric differentiation as a method to study the kinetics of luminescence and photoconductivity. N. A. Tolstoi. *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 15, 712-20(1951).—An oscillographic method is proposed in which not only the function $y = f(t)$ is shown on the vertical axis of the oscillograph but also by means of a suitable network the derivative of this function. The errors involved in the phys. process of elec. differentiation are discussed and the following applications of the method are treated: (1) exponential decay; (2) processes with an exponential start; (3) hyperbolic decay; (4) initial velocity of activation and decay; (5) inflexion point in the activation curve; (6) comparison of luminescence and photocond.; (7) detn. of α in Becquerel's law; (8) initial velocity of the start and decay of photocond.

S. Pakswer

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A.: FEOFILOV, P. P.

Photoelectricity

Kinetics of photoconductivity and the kinetics of phosphorescence. Izv. AN SSSR. Ser. fiz 16, No. 1, 1952.

Monthly List of Russian Accessions, Library of Congress, November 1952 UNCLASSIFIED

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

235T93

TOLSTOY, N. A.

USSR/Physics - Luminescence Extinction 21 Jul 52

"Problem of Extinction of Luminescence of Rubin (Al_2O_3.Cr)," N. A. Tolstoy, P. P. Feofilov

"Dok Ak Nauk SSSR" Vol 85, No 3, pp 551-554

Presents certain data on concn, temp, and spectral dependences of curves of extinction (and lighting) of luminescence of synthetic ruby, from which it follows that the mechanism governing luminescence in rubies is rather complex. Submitted by Acad A. N. Terenin 26 May 52.

235T93

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TOLSTOY, N. A.

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The relaxation time for the luminescence of cuprous oxide and its temperature dependence. N. A. Tolstoi and N. N. Tkachuk. *Doklady Akad. Nauk S.S.S.R.* 95, 65-8(1954) — The relaxation time of Cu_2O was measured by means of an ultrataumeter which is discribed in detail and which registers inertia of the order of 1×10^{-6} sec. The measurements were made over a temp. range −183–20°. The relaxation time τ was found to increase with increasing temp. by a factor of 20–40 in the given range. This anomalous temp. dependence excludes the possibility of a monomol. mechanism for the luminescence of Cu_2O. The following conclusions are drawn: Cu_2O luminescence is due to a recombination mechanism with a large difference in the no. of recombining partners (free electrons are fewer than luminescence centers); the lifetime of a center is $3\text{–}4 \times 10^{-4}$ sec.; the lifetime of an electron in the band of cond. $< 3 \times 10^{-4}$ sec. at −183° and increases to $\approx 10^{-4}$ sec. at room temp.

J. Rovtar Leach

Smolyan

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TOLSTOY, N.A.

Some details of the luminescence kinetics of the ZnS-Cu phosphors. N. A. Tolstoi. *Doklady Akad. Nauk S.S.S.R.* 95, 249–52(1954).—The phosphorescence of the ZnS-Cu phosphor cannot, apparently, be explained by the simple bimol. or the simple unimol. theories, and in order to simplify the studies was investigated experimentally (1) under conditions of rapid extinction at high temp., and (2) under the initial relaxation conditions. The present report covers only the 1st part of the investigation. An investigation of the extinction leads to the conclusion that the mechanism of the phosphorescence phenomenon of ZnS phosphor is bimol. at a high temp., and that the exciting light has also an extinguishing effect.

W. M. Sternberg

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Tolstoy, N.A.

K

USSR/Optics

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10619

Author : Tkachuk, N.N., Tolstoy, N.A.
Inst : State Optical Institute, USSR
Title : Instrument for Measurement of Relative Pulsations of Light Fluxes.

Orig Pub: Svetotekhnika, 1955, No 2, 27-29

Abstract: Description of a method and of an instrument for rapid objective measurement of the relative pulsations of light flux. The direct purpose of the instrument is the measurement of the stroboscopic effect of fluorescent lamps. The studied light flux is received by an antimonycesium photocell (equipped with light filters, including a light filter that "equates" the photocell to the eye). The signals from the photocells are received by a dc amplifier, fed from the power line. A dividing network on the output of the amplifier separates the purely alternating portion of the signal

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USSR/Optics

K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10619

and its dc component, and these are applied respectively to two pointer meters. Normalizing the coefficient of amplification of the dc components to unity (setting the pointer of the second instrument at the "red marker"), one obtains the value of the relative pulsations of the light flux by directly reading the first pointer instrument. The accuracy of the "strobometer" is better than 1%.

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TOLSTOY, N.A.

FD-2983

USSR/Physics - Aerosol particles dipole moment

Card 1/1 Pub. 146 - 24/28

Author : Spartakov, A. A.; Tolstoy, N. A.

Title : Rigid dipole moment of aerosol particles

Periodical : Zhur. eksp. i teor. fiz., 29, September 1955, 385

Abstract : New methods of investigating electro-optical phenomena in hydrophobe colloids (N. A. Tolstoy, P. P. Feofilov, DAN SSSR, 66, 617, 1949; N. A. Tolstoy, DAN SSSR, 100, 893, 1955) which are based on the study of the modulation of light passing perpendicularly to the lines of an electric field through a planar condenser fed by rectangular voltage impulses show that colloidal particles in aqueous media possess rigid dipole moments of quite considerable magnitude. It is assumed that this rigid dipole moment is caused by spontaneous orientation of water molecules adsorbed on the surface of the particle, which have a rigid dipole. The unipolarity (in the mean) of this orientation permits one to liken the water film adsorbed on the particle to a surface piezoelectric. The present writers carried out similar experiments with aerosol, and found that the electrooptical properties of the mist can be perfectly similar to the properties of hydrophobe colloids. They state that the establishment of the dipolarity of mist particles can possess significance for the explanation of the mechanism governing the aggregation of noncharged particles in mists.

Institution : Leningrad Technical Institute

Submitted : May 12, 1955

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TOLSTOY, N. A.

FD-2984

USSR/Physics - Luminescence

Card 1/1 Pub. 146 - 25/28

Author : Tolstoy, N. A.; Tkachuk, A. M.; Tkachuk, N. N.

Title : Temperature dependence of relaxation time of luminescence of barium and potassium platinocyanides and fluorite activated by europium

Periodical : Zhur. eksp. i teor. fiz., 29, September 1955, 386-387

Abstract : By means of the method of the ultra-taumeter (N. A. Tolstoy, DAN SSSR, 102, 935, 1955) the present writers succeeded for the first time in investigating the kinetics governing the photoluminescence of several substances for which the time of extinction of luminescence lies in the time interval 1/10 to 10 microseconds (the absence of such data on the relaxation of photoluminescence in his time caused S. I. Vavilov to call this interval a blank in luminescence (Izv. AN SSSR, Ser. fiz., 13, 216, 1949). They find that for all three substances ($K_2[Pt(CN)_4 \cdot 3H_2O$, $CaF_2(Eu^{++})$, barium platinocyanide) the brightness of luminescence is proportional to the intensity of excitation E and that the times of extinction and flare-up do not depend upon E; thus all three cases are concerned with monomolecular processes representing comparatively slow fluorescence. Four references: e.g. P. P. Feofilov, DAN SSSR, 99, 731, 1954.

Submitted : May 27, 1955

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TOLSTOY, N.A.

FD-2915

USSR/Physics - Luminescence

Card 1/1 Pub. 146 - 15/19

Author : Tolstoy, N. A.; Litvinenko, I. A.

Title : Instantaneous measurement of light sums of rapidly extinguishing luminescent processes

Periodical : Zhur. eksp. i teor. fiz., 29, Oct 1955, 507-515

Abstract : The authors propose a new objective method for the instantaneous measurement of the light sums L_r (the area under the curve of phosphorescent flare: razgoraniye fosforestsentsii) and L_z (the area under the curve of extinguishing: zatukhaniye) for rapidly occurring luminescent processes). They think that the ratio L_r/L_z can serve as a criterion for the selection of one or another theory of phosphorescence, in as much as the various theories predict different quantities for this ratio. Measurements of this ratio for extinguished ZnS-Cu phosphor indicate the inapplicability of the theory based on the bimolecular mechanism of luminescence and on the monomolecular mechanism of extinguishing. Five references: e.g. N. A. Tolstoy, DAN SSSR, 95, 249, 1954; N. A. Tolstoy and P. P. Feofilov, Izv. AN SSSR, Ser. fiz., 16, 59, 1952.

Submitted : June 13, 1954

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

TOLSTOY, N. A.

USSR/ Physics - Colloidal particles

Card 1/1 Pub. 22 - 14/49

Authors : Tolstoy, N. A.

Title : About a rigid dipole momentum of colloidal particles in water

Periodical : Dok. AN SSSR 100/5, 893-896, Feb 11, 1955

Abstract : It is explained on the basis of experimental and theoretical data that in light modulation by a water solution of colloidal particles in a square-wave electric field the modulation occurres because each colloidal particle in water possesses a rigid dipole electrical momentum, the amount of which is, also experimentally, determined, its rough expression is: $\mu = \frac{2\beta\omega}{\varepsilon} \approx 6.10^{-12}$ SGSE system of units. One USSR reference (1949). Diagrams.

Institution : .....

Presented by : Academician A. N. Terenin, October 18, 1954

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2"

"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

USSR/ Physics - Ultra-tau-meters

Card 1/1 Pub. 22 - 22/54

Authors : Tolstoy, N. A.

Title : An ultra-tau-meter with a mechanical modulator of light and some data on the relaxation of luminescence in the region of the "blank" (white) spot

Periodical : Dok. AN SSSR 102/5, 935-938, June 11, 1955

Abstract : A description of an ultra-tau-meter is presented. This instrument is designed for measuring very fast relaxation processes (luminescence, photo-conductivity, dielectric polarization, gas discharge, etc.). The instrument has a mechanical light modulation. The instrument can be used for observation of phenomena that last 10^{-5} - 10^{-7} sec, this range is known as the "white (blank) spot" because this region has not as yet been investigated. Some results obtained with this instrument are described. Nine USSR references (1937-1954). Diagrams.

Institution : .....

Presented by : Academician A. N. Terenin, February 21, 1955

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"APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001756120016-2

USSR / Optics Tolstoy, N.A. K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10367

Author : Tolstoy, N.A., Shatilov, A.V.
Inst : State Optical Institute, Leningrad USSR
Title : Formal Analysis of the Theory of the Two-Step Excitation of Phosphorescence and Photoconductivity. I. Stationary Relations.

Orig Pub: Optika i spektroskopiya, 1956, 1, No 2, 216-229

Abstract: A formal analysis is given of the stationary relations of the brightness of glow I_∞ and the photoconductivity $\Delta\sigma_\infty$ on the intensity of the exciting light E in the two-step excitation of phosphorescence and photoconductivity scheme under the assumption that the recombination is subject to the reaction of the first order (pseudomonomolecularity). It is proposed that the primary absorption of the light transfers the electrons to the first step of the scheme (local levels 1, which under definite circumstances can merge in the impurity band). Upon secondary absorption of the light, the electrons are transferred from the first step of excitation to the second --

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USSR / Optics K

Abs Jour: Referat Zhur-Fizika, 1957, No 4, 10367

to the conduction band (2). Account is taken of the possibility of thermal throwover from the first excitation step into the second -- and also of the repeated adhesions ($2 \rightarrow 1$). It is found that n_1 (the stationary of electrons at levels 1, proportional to the photoconduction over the impurity zone) first increases linearly with increasing E, and then becomes proportional to $E^{1/2}$ (the interval in which the "square root" law is valid increases with the increasing probability of the repeated adhesions), and finally, tends to saturation. The quantity $n_{2\infty}$ (stationary number of electrons in zone 2, proportional to the brightness of glow and to the photoconduction over zone 2) increases with increasing E, depending on the ratio of the scheme parameters, either (1) first linearly and then superlinearly (up to $n_{2\infty} \propto E^2$) and finally again linearly, or else (2) linearly, sublinearly, and again linearly. The flow yield is estimated for possible ratios of the scheme parameters. The theoretical results are compared with the experimental data on the dependence of I_∞ (E) and $\Delta\tau_\infty$ (E).

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Tolstoy, N.A.

USSR/Optics - Physical Optics

K-5

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 12926

Author : Tolstoy, N.A.

Inst :

Title : Flareup Flash of the ZnS-Ni Phosphor.

Orig Pub : Optika i spektroskopiya, 1956, 1, No 2, 271-272

Abstract : It was observed that the ZnS-Ni phosphor (10^{-5} -- 10^{-7} g/g) has a considerable stronger flareup flash in the long-wave band of nickel glow (approximately 650 millimicrons), than the phosphors ZnS-Mn (Tolstoy, N.A., Feofilov, P.P., Dokl AN SSSR, 1949, 68, 285). The azure band of glow of zinc has a normal course of flareup. The attenuation time, after which one can still observe the flash flareup of ZnS-Ni, is considerably more than several days at approximately 20°. Illumination with infrared light during the attenuation process increases the magnitude of the flash, and illumination was visible (but not with exciting)

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TOLSTOY, N.A

"Einfuhrung in die Physik. Dritter Band. Optik und Atomphysik [in German] R.W.Pohl. Reviewed by N.Tolstoi. Opt.i spektr. 1 no.3:443-444 Jl '56. (MLRA 9:11)
(Optics) (Nuclear physics) (Pohl, R.W.)

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